MASSACHUSETTS HIGHWAY COMMISSION

YEAR ENDING NOVEMBER 30

1914

Deerfield River Bridge, Mohawk Trail.

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TWENTY-SECOND ANNUAL REPORT

OF THE

MASSACHUSETTS HIGHWAY COMMISSION,

FOR THE FISCAL YEAR ENDING NOVEMBER 30, 1914.

JANUARY, 1915.

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Approved by
The State Board of Publication.

The Commonwealth of Massachusetts.

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled.

The undersigned commissioners, appointed under the provisions of chapter 476 of the Acts of 1893 and of chapter 474 of the Acts of 1900, herewith submit their twenty-second annual report, in accordance with the provisions of chapter 47 of the Revised Laws, for the fiscal year ending Nov. 30, 1914.

WM. D. SOHIER.
F. D. KEMP.
JAMES W. SYNAN.

Boston, Mass., Jan. 6, 1915.

ANNUAL REPORT OF THE MASSACHUSETTS HIGHWAY COMMISSION.

The Board consists of the same members as last year. Mr. Frank D. Kemp was reappointed by Governor Foss on Jan. 7, 1914.

Organization.

The commission has under its charge road work, the registration of motor vehicles and the licensing of the operators thereof, as well as the investigation of automobile accidents. There is a department for the highway work and another for motor vehicles, with a separate division for the investigation of accidents and the examination of operators. A chart is included in last year's report, showing the organization more in detail.

Highway Department.

This department has charge of all road and bridge work, advice to municipal authorities, etc. At the head of it is the chief engineer, A. W. Dean, whose assistant is S. A. Parsons. The office engineering department, which makes the surveys, prepares all plans and estimates, etc., is in charge of A. M. Lovis. In this department are employed from 20 to 60 engineers, draftsmen, instrumentmen and rodmen, depending on the season of the year and the amount of work on hand.

The State is divided into four divisions, each in charge of a division engineer, and each division engineer has one or two assistants in charge of particular work, like "small town" work, maintenance, etc., and as many resident engineers are assigned to his division from time to time as are necessary to supervise and inspect the actual work which is in progress.

Division I. is in charge of J. A. Johnston, with headquarters at Springfield, A. D. Dadley being the assistant division engineer. This division includes most of Berkshire County,

Hampden and Hampshire counties and a large part of Worcester County.

Division II. is in charge of C. H. Howes, with headquarters at Greenfield. This division includes Franklin County, a part of Hampshire County, and many towns in the northern part of Worcester County; also the road down Hoosac Mountain into North Adams.

Division III. is in charge of F. C. Pillsbury, whose assistant division engineer is D. H. Dickinson. The headquarters of this division are at Boston, the division including the eastern part of Worcester County, Middlesex, Essex and Suffolk counties and a part of Norfolk County.

Division IV. is in charge of W. R. Farrington, with W. P. Hammersley and H. C. Holden as assistant division engineers. This division includes part of Norfolk County and Bristol, Plymouth, Barnstable, Dukes and Nantucket counties, the headquarters being at Middleborough.

The work on the road from Charlemont to the top of Hoosac Mountain, through Cold River, has been in charge of H. D. Phillips, assistant division engineer, especially assigned to the work.

Most of the principal engineers and assistants have been in the service of the Commonwealth for over ten years, and quite a number of them for a much longer period of time.

The several departments report to the commission through its secretary, F. I. Bieler. His assistant is Fred Fair.

The records of the commission, etc., are in charge of the recording secretary, Miss Mary A. Riley. The accounting department is in charge of John M. McCarthy.

Motor Vehicles.

The automobile department, which is engaged in the registration of motor vehicles and the licensing of the operators thereof, including the collection of fees therefor, is under the charge of E. J. O'Hara. In this department there are from 50 to 100 assistants, clerks, stenographers, shippers, packers, etc., depending on the season of the year.

Examinations and Investigations.

This subdepartment, which conducts all the examinations of applicants for chauffeurs' licenses, etc., and investigates motor vehicle accidents, is in charge of F. L. Austin. There are 11 other examiners and investigators employed in this work.

Hearings.

During the year 308 hearings were given on automobile complaints and accidents and matters relating to the registration and operation of motor vehicles.

Public hearings were given by municipal authorities on special regulations affecting the use and operation of motor vehicles in Brockton, Lanesborough and Malden.

There were 16 hearings given on petitions for the location, extension and relocation of street railways on State highways.

In addition to the regular hearings held in each of the 14 counties, the commission gave many hearings on petitions from various cities and towns for State highways or for aid in the improvement of town ways.

Besides these formal hearings given at the office or elsewhere to the authorities or representatives of the cities or towns, one or more members of the commission met the municipal authorities, or inspected the roads to be built or improved by the municipalities or otherwise, in more than three-quarters of the towns in the Commonwealth.

State Highways.

During the year ending Nov. 30, 1914, the commission completed work on about 76 miles of State highway, portions of which were laid out in 1913. Construction was commenced, but not completed, on over 13 miles of roads in 20 cities and towns. Layouts were made of about 59 miles of State highway in 45 cities and towns. The total length of State highways at the end of the year was 1,039.07 miles.

The total expenditures by the commission for the construction of State highways since the work began, including the planting of trees, amounts to $10,390,599.02. It must be remembered

that the counties repay to the Commonwealth one-fourth of the cost of constructing these highways.

On Sept. 30, 1914, the total amount of bonds issued was only $8,698,500. The sinking fund established by law to extinguish these bonds amounted to $2,792,342; consequently, the net debt was only $5,906,168. The expenditures had been over $10,000,000; the net debt was for less than $6,000,000.

In this connection it should be remembered that in 1913 and 1914 the amount that the commission was authorized to expend, and the State to borrow, was increased from $500,000 to $1,000,000 a year; consequently, the amounts expended in these last two years have been nearly $2,000,000 of the total of $10,000,000.

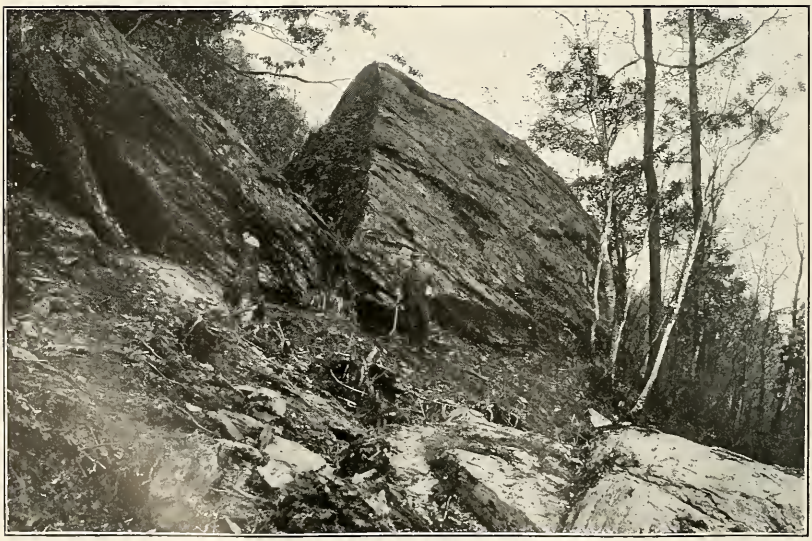
The commission feels safe in saying that the State highways could not be replaced in the condition they are now in, although some of them are twenty years old, for considerably more money than the amount of the net debt, — $6,000,000,— and it doubts if they could be replaced, with the great increase in the cost of labor and materials, for the gross amount of bonds now outstanding, amounting to less than $8,700,000 in all.

Until 1913 there was only $500,000 a year available for the construction of State highways and for the work on "small town" roads, $75,000 of that amount going into the towns. The Legislature in 1912 authorized the expenditure of $5,000,000 during the following five years, not more than $1,000,000 to be spent in any one year for the above purposes. Of this amount, $150,000 is to be expended upon the "small town" roads, $100,000 of which is only available in case the towns contribute a like amount.

Petitions.

There were 920 petitions filed by the cities and towns for the laying out of State highways before this year, these petitions covering 2,163 miles of road. This year 24 petitions were received, covering 42 miles of road, making a total of 944 petitions now on file, covering about 2,215 miles of road in 30 cities and 298 towns.

Twenty-nine Foot Ledge Cut, Mohawk Trail.



Ledge Excavation, Mohawk Trail.

Character of Construction.

The Board has continued its policy of making the main roads wider, usually building 18 feet of stone surface, instead of the 15 feet which was formerly the standard width. It has also continued to use on such roads some bituminous binder in construction, and has been reducing the crown of the road to about 1 inch to the yard in width, not only to make the roads less slippery, but also that the traffic will distribute itself over the whole width of the road. This additional width and the bituminous binder, which must now be used, increase the cost of construction from 50 to 75 per cent. The eight-hour law and the workmen's compensation act have also largely increased the cost.

The increase in the traffic, especially in motor trucks and automobiles, makes this additional width and more expensive construction absolutely necessary.

Of the State roads completed in 1914, 35¾ miles were of bituminous macadam; 4¾ miles were of water-bound macadam (which will be coated with some bituminous binder); 3⅛ miles were of gravel; 5½ miles of sand bound with heavy asphaltic oil; 4 miles of macadam coated with hot asphaltic oil; 3⅕ miles of bituminous gravel; 2¼ miles of concrete; 2½ miles of sand and clay; and over 15 miles of graded road, which must be surfaced in the future.

Further details, regarding the methods of construction used, will be found in Appendix A, the report of the chief engineer.

Location of State Highways (Through Routes).

The commission has continued its policy of filling in the gaps on the main lines of travel as rapidly as possible, building those sections in the smaller and poorer towns, which could not afford to build or maintain roads of the character necessary to sustain the immense through traffic to which they are now subjected.

In the communities that were able to help themselves, the commission has co-operated wherever possible. During the past two years the counties, cities and towns have co-operated and built connecting roads, or made appropriations to aid in improving the main routes, to a much greater extent than ever

before. The amounts so appropriated and expended during the past two years are certainly twice, if not three times, as much as the average amount expended in former years. Now most of the counties are co-operating, and nearly one-half of all the municipalities have made appropriations for the purpose of improving through routes.

Western Massachusetts.

Following this policy, the Mohawk Trail, which is fully described elsewhere in this report, has been constructed, connecting the city of North Adams with Greenfield; and the entire road from North Adams to Boston via Fitchburg is now open to the public.

During the year the north and south routes in Berkshire County were built upon to connect Connecticut and New York points with Pittsfield, North Adams and places in Vermont. A State highway was laid out and constructed in Cheshire, practically completing the route between Pittsfield and North Adams.

A State highway was laid out and is being constructed in Sheffield, on the main line between the Berkshires and New York, on the Under Mountain Road, so called, in continuation of work previously done. Another road in Sheffield is being constructed, to connect with the State highway in Connecticut, the expense being borne by both the town and the State. Much work has been done and is in progress on the route between Pittsfield and Williamstown, the town of Williamstown, the county of Berkshire, and the commission co-operating. This work is fully described elsewhere in this report under the heading of work done under special acts.

Albany–Springfield.

This main east and west route is now practically completed, the gap in Pittsfield having been completed this year.

A State highway was laid out and constructed in Lee and Becket, completing the Jacob's Ladder route. This road has a bituminous macadam surface. In Becket, three small bridges that were narrow and unsafe are being reconstructed at a suitable width.

During the past two years the road through the village of Huntington, which was in very bad condition, was reconstructed, and surfaced with bituminous macadam, the town and the State co-operating.

A section of highway in the town of Russell, which had been merely graded, was surfaced with bituminous macadam, the roadway being widened, and the corners and curves very much improved.

Quite a long stretch of State highway in Westfield had been in bad condition for many years, the foundation being poor and the surface more or less worn out. In this vicinity, a grade crossing was recently abolished, involving an alteration of a portion of the State highway location and a relocation of the street railway tracks. This road has been relocated, where necessary, reconstructed and widened, and a stone foundation has been put in for nearly the entire length, the surface being of bituminous macadam.

The Mohawk Trail.

The preliminary work for the securing of a highway over Florida or Hoosac Mountain was authorized by the Legislature in 1911. Seventy-five thousand dollars was made available for the purpose of making the necessary preliminary surveys and for work upon the road.

In 1912 the commission reported that, after surveying many routes, its engineers had discovered a new route from the valley of the Deerfield River to the North Adams line near the top of Hoosac Mountain, which would furnish a much better grade and be much less expensive to build than anything that could be done on the location of the old road.

The commission told the Legislature then if it would make available a second $75,000, making $150,000 in all, it believed that it could construct the road up the eastern side of the mountain with that money and with other money which could be made available from the regular appropriation for the construction of State highways.

This new route followed substantially the line of the old Mohawk Trail, crossing the Deerfield River at Cold River, thence following along Cold River to Manning Brook, thence

along Manning Brook to Drury, and so along the crest of the mountain to the summit at Whitcomb Hill.

The contract was let, and the work was begun in the fall of 1912. It was continued in 1913 and completed in 1914. At times there were as many as 300 laborers upon the work.

Vehicles were allowed to pass over the road the Saturday before Labor Day, although at that time a section near the top of the mountain was under construction, and it was necessary to use a part of the old road in passing over the mountain. That section was completed late in October.

The new road from the Deerfield River to the North Adams line is about 12 miles in length. It has been constructed at a minimum width of 22 feet, and in many places it has a width of from 30 to 40 feet. It is merely a graded road, the best available material being used upon the surface. The work of building the roadway itself has cost about $230,000.

As the commission reported to the Legislature last year, a very large amount of the earth excavated was hardpan or similar material that was extremely difficult to handle. It had to be all picked or blown out with dynamite. For a long distance the roadway is located along Cold River, and it was necessary to excavate into the sides of steep mountain slopes.

The material was of such a character that during heavy rains, and when the frost was coming out of the ground, the banks were continually sliding, and covering substantially the whole width of the road. This caused a very large amount of additional excavation, — somewhere in the neighborhood of 100,000 yards, — costing $50,000 or more. Many of these slopes have now been protected by building up crib work on the sides. There are about 1,200 feet of such crib work.

There are some 290 culverts and small bridges and about 7 miles of guard rail that had to be built along the road on the east side of the mountain. Besides this, there are 2 concrete bridges, — one over the Deerfield River, and the other over Cold River, the former costing about $34,000, and the latter about $13,000. The bridge over the Deerfield River is a 3-arch bridge about 280 feet in length, including the approaches, the middle arch being 86 feet in length, and the 2 side arches 78 feet each. The bridge over Cold River has a span of 68

Old Tote Road, Mohawk Trail.

Crib Work, Mohawk Trail.

feet. The total cost of this part of the road, including the bridges, amounted to something over $275,000.

As it was evident that a road leading from Charlemont westerly to the top of the mountain would be of very little use until it was continued down the other side of the mountain into the city of North Adams, the commission took the matter up with the authorities of that city.

After surveys and plans had been made showing that there was a feasible route on the North Adams side of the mountain, the city of North Adams agreed to pay all land and grade damages and to contribute not exceeding $19,000 towards the cost of constructing the road from the North Adams line to Five Corners, so called, in the city of North Adams, a distance of about 4 miles.

The contract was let in the fall of 1913; and the road was open for travel the Saturday before Labor Day, and is now practically completed.

A fairly good grade was secured on the North Adams side of the mountain by making a long side-hill cut running to the north, then turning and continuing toward North Adams. The road is of substantially the same width as the road on the other side of the mountain, except for the turn about a third of the way down the mountain, where there is a very beautiful view and where vehicles always stop, and this was made very much wider so as to allow plenty of room and to make the turn perfectly safe.

The commission allotted $50,000 for the construction of this road, to be used with the $19,000 appropriated by the city of North Adams. This 4 miles of road will cost substantially $70,000.

The road on both sides of the mountain involved some very heavy construction work and grading. At one point there was a cut of 27 feet in solid ledge.

The road was graded with the material that was excavated, which was of a loamy character and not very suitable for surfacing. The fills are so deep in many places that there will be a very considerable settlement, and, even if money were available to surface the road with suitable material, it would not be advisable to do it at this time or in the immediate future, until the fills have thoroughly settled.

This is undoubtedly the most important piece of highway work which has been done in this State and probably in the New England States in many years. The road is located over a most beautiful scenic route, climbing up Cold River and then along the gorge of Manning Brook, with beautiful views over the Deerfield River valley to the east and the Berkshire valley on the western side of the mountain.

It is 12 miles from the crossing of the Deerfield River to the North Adams line near the top of the mountain. There is a difference of about 1,600 feet in height between the Deerfield River and the top of Whitcomb Hill, which is the summit of the mountain. On this side of the mountain the maximum grade is slightly in excess of 7 per cent., extending a distance of only about 2 miles.

On the western side of the mountain, to North Adams, there are nearly 3 miles of 7 per cent. grade, and there is a descent in elevation of over 1,200 feet from the top of the mountain to the city of North Adams.

The old road had 20 per cent. grades, and was rough, narrow and dangerous; but on the new road there is ample width, — 30 feet at all turns, — no part of the road being less than 22 feet in width.

The work on the easterly side of the mountain to the North Adams line has been in charge of H. D. Phillips. The work on the North Adams side has been in charge of C. H. Howes, division engineer, and under the immediate direction of his assistant, W. G. Burns.

This road makes a connecting link on the main east and west route in the northern part of the State between Greenfield and North Adams, and practically completes the main east and west highway from Boston via Fitchburg and Greenfield to North Adams and Williamstown.

There are many miles of road, however, between Greenfield and North Adams which require straightening and improvement, and with the increase in travel the surface of the whole road will have to be improved. This will cost a very large amount of money, and several years must necessarily elapse before the whole road surface can be improved. In the mean-

time the commission will endeavor to see that it is maintained in reasonably passable condition as a summer road, by keeping it shaped and patched, and by oiling parts of it.

Florida Mountain Reservation.

The commission believes that it would be wise at this time to arrange to have the mountain sides and roadsides, with the present growth of trees, preserved as a public reservation.

This most beautiful scenic route depends largely upon the preservation of the trees upon the mountain sides, not only for its attractiveness, but for the safety of the roadway itself.

Last year about 100,000 cubic yards of earth slid down onto the road and had to be removed, at a large expense.

While the slopes are now somewhat protected by crib work and held by the tree roots, they would be rapidly washed down onto the road if the trees on the mountain sides were cut; and it might cost the State more for the removal of the earth than the whole value of the land, trees and all.

In many places the land should be taken not only for the maintenance of the slopes, but to prevent the erection of unsightly buildings, and ensure for all time the preservation of the beautiful views. At the present time the land is of little value, and enough of it could be secured at small cost for the purposes above mentioned.

It is not within the province of the commission to suggest how or by whom this land should be taken and held, but it believes that such a reservation should be established, and the land secured now by the State, by the counties of Berkshire and Franklin, or by the State and counties jointly, apportioning in some equitable manner the cost of acquiring the land and maintaining it.

Many precedents for such action will be found in other places, like the Wachusett, the Mount Everett, the Mount Tom and the Greylock reservations, to say nothing of the metropolitan parks around the city of Boston.

The commission believes that a Florida Mountain reservation will be of great public benefit, and that the cost will not be excessive.

Black Brook Road.

As soon as the construction of the new road along Cold River got fairly started, it became evident to the citizens of the town of Savoy, especially those living in the little hamlet of Brier, that if some connection could be made between this new road and the existing town roads at Brier, it would give them a way into North Adams on the west and Charlemont on the east, by a road that was some 6 miles shorter than the route they were then using.

The town authorities consulted with the commission, a survey was made and a rough estimate prepared of the cost of making such a connection. The country is very rough and broken, and road construction of any character in that section is very expensive. It is about 1 mile from the bridge over Cold River on the new Mohawk Trail to the village of Brier in the town of Savoy.

The town, with a population of 503, voted to appropriate $2,000 toward the cost of constructing the proposed new road. The commission made an allotment of $4,000, to be used with the town's contribution. It was found that without tremendous expense it would be impossible to build a road with a maximum grade of less than 12 per cent.; but that for $8,000 or $9,000 a road could be built, having a maximum grade of not over 14 per cent., and a minimum width of 12 feet, with wider places for vehicles to turn out at very frequent intervals, and that much of the road could be made 20 feet in width. The commission then increased its allotment to $7,000.

The work on this road has been started and will be completed early in the spring. It would have been completed this fall but for the breaking down of the compressor working the drills, necessitating a delay of three weeks. In the meantime the work had to be discontinued for this winter because of the heavy frost and snow. The work will be started as early in the spring as the weather conditions will permit.

Other Berkshire and Connecticut Valley Routes.

A great deal of work has been done in the last few years on a route connecting the city of Northampton with Pittsfield via the towns of Williamsburg, Goshen, Cummington, Windsor and Dalton.

Another route is in the northern part of the State, connecting Greenfield with North Adams and Williamstown over Hoosac Mountain by the Mohawk Trail. Besides the work therein described, the commission has constructed a short section of State highway on a new location in the town of Charlemont near Scott's bridge, at the line between Buckland and Charlemont.

The commission has also for many years been widening and improving the road to Charlemont, in part from money available under the "small town" act and in part with money obtained from the motor vehicle fees. This work is still in progress.

The whole road from Greenfield to North Adams, about 30 miles in length, is practically only a graded road, it being difficult and at some places impossible to secure good gravel for surfacing. With the volume of travel which will pass over it, as soon as the public realize that this attractive route is safe and passable, the road will have to be surfaced with better material, either broken stone, with a bituminous top, or gravel, if it can be found.

This will be very expensive, because in most places along the road the local stone is of such a character that it would probably not be economical to use it.

Connecticut Valley.

For many years the Board has been working to secure a continuous stretch of good road from the Connecticut line to the New Hampshire line via Springfield, Holyoke, Northampton, Greenfield and Northfield. The road connects in Hinsdale, N. H., with the New Hampshire State highway to Keene and the White Mountains.

This road is now practically completed except for a bad stretch in the city of Northampton, but it is hoped that the city will improve this section in the near future.

A connection should be made very soon upon the west side of the river between Bernardston Common and the town of Guilford, Vt., and so on to Brattleboro, Vt.

On the east side of the Connecticut valley via Longmeadow, Springfield, Chicopee, South Hadley, Amherst and Sunderland to South Deerfield, the road is completed except for about 1½ miles between South Hadley and the top of the Notch at Mount Holyoke, and about 3 miles in the town of Amherst.

In 1914 about 1 mile of State highway was built in the town of Sunderland, the surface consisting of broken stone with a bituminous coating.

Two miles of road were constructed in Amherst at the joint expense of the town and State; and about two-thirds of a mile was constructed in the town of Granby at the joint expense of the town and State.

It is expected that this work will be continued in the future, and that the whole route will be improved within the next two years.

Nearly 1 mile of State highway was constructed in Granby, and about 1 mile in Belchertown. The road was built of macadam, with a cold oil blanket covering. This completes this road as far as Belchertown Common.

A road that for many years has been in bad condition is the one from Mount Tom to Easthampton, over the mountain. This road was very narrow and steep. It has been widened, improved and constructed through the co-operation of the town, county and State. The construction was very expensive because the widening required the removal of large quantities of ledge. It cost about $11,000 for less than half a mile, but a good road was much needed in this location.

Greenfield and Fitchburg to Boston.

The commission has been working for many years to complete this route. Last year a State highway was laid out and constructed in the towns of Shirley, Ayer and Littleton. The town of Athol constructed the main road through the village, and the commission co-operated by building about half a mile of road to connect with the State highway on the east. The work was continued in 1914.

In the town of Erving there was a gap about 2 miles in length that had been left unconstructed because a power company proposed to build a dam, — flooding the old road, — and to construct a new road upon a higher location. As this project did not materialize, the commission decided to construct this gap as a State highway.

A contract was advertised and let for the construction of a portion of the road, and the work progressed so rapidly that

the contract was extended, and the whole stretch, about 2 miles in length, completed. Part of the old road was low and was frequently under water, and a heavy fill was required. Most of the way a foundation was necessary, and this made the construction very expensive. The road was surfaced with bituminous macadam (penetration method), an asphaltic oil being used. The cost was about $33,000.

A section of State highway was also constructed in Shirley on the Fitchburg road, in continuation of the previous year's work. This road was surfaced with gravel mixed with asphaltic oil, all heated before being mixed. This mixture was placed upon a broken stone and gravel base. The contract has been extended to cover the construction of the remainder of the road in Shirley; the work is partly done and will be completed early in the spring. This will complete the road between Boston, Fitchburg and Greenfield.

A short piece of State highway was also constructed in the town of Ayer, on the road leading to Groton, which connects with the road to Fitchburg via Lunenburg.

A part of the old State highway in West Fitchburg was resurfaced with bituminous macadam and widened to 18 feet, an asphaltic oil being used.

About 1¼ miles in Phillipston were also widened and resurfaced with bituminous macadam, the surface being widened to 15 feet. Refined tar was used, by the penetration method.

On this route there are many miles of old macadam State highway that have never been resurfaced, and that have been maintained by constant patching and by yearly applications of cold asphaltic oil covered with gravel and coarse sand.

Fitchburg to Keene, N. H.

Last year the commission, co-operating with the county commissioners of Worcester County and with the towns, constructed a gravel road from West Fitchburg to Winchendon on this through route, the county contributing towards the cost of the road in Westminster, and the road in Ashburnham and Winchendon being constructed at the joint expense of the town and the State. Seven miles of road were constructed, and it was all oiled this year.

The commission intends to lay out the road in Westminster and Ashburnham as a State highway, as these towns do not make much use of the road and cannot afford to maintain it in proper condition.

In the town of Winchendon a gravel road is being constructed from the New Hampshire line towards Winchendon, about 1½ miles in length, the town and State each bearing one-half the expense. When this is completed, about 1 mile only will remain to be built on this main route; and it is expected that this section will be completed next year, thus furnishing an improved through route between Boston and Keene, N. H., as far as the New Hampshire line.

There is a secondary line of State highway connecting the towns of Groton, Pepperell and Townsend with an uncompleted gap in Pepperell and Groton. This stretch of road, 1¾ miles long, has been laid out as a State highway, and the construction of a gravel road is well under way.

Springfield and Worcester to Boston.

This main route is now practically completed, but with the large number of automobiles that now use it daily (over 1,000 passing over it on any pleasant Saturday or Sunday), the present roadway is too narrow at places, and many of the corners and curves are too abrupt and blind. Much of it needs widening and resurfacing with some material which will make a hard and durable surface, so that it will be safe and not be destroyed by the increasing automobile traffic, and especially by the large number of heavy motor trucks that already use it. The same remarks would apply to all the other main through routes leading in and out of Boston and other large cities.

The Legislature in 1914 made $100,000 available for widening and reconstructing the older State highways. A part of the appropriation has been spent on this route in Wilbraham and Palmer, widening and improving corners, and resurfacing the road with bituminous macadam.

In Brookfield, Spencer and Leicester the road has been widened in places, and considerable work has been done in banking the corners and improving the view, but much more should be done and would be if the money were available.

In Shrewsbury quite a stretch of State highway on this route has been widened and reconstructed, the surface consisting of bituminous macadam. This road was rutted by the motor trucks and heavy vehicles, and on part of the road a new foundation was necessary.

In Northborough, Marlborough and Sudbury the road has been widened in places, and the most dangerous corners improved.

In Wayland, from Wayland Center to the Weston line, a distance of over 1½ miles, the whole road has been widened, and now has a bituminous macadam surface 18 feet in width, with a 3-foot shoulder on each side. The curves have all been widened and banked.

On the level portions of the road a bituminous macadam surface was constructed, using an asphaltic material by the penetration method. On the hills the macadam was thoroughly rolled, and all the voids in the upper course of stone were filled with a mixture of hot tar and hot sand, and smaller stone and dust were rolled in. It is hoped that this surface will prove to be less slippery than the asphalt macadam.

The continuation of this road in Weston was resurfaced and widened last year and the year before.

Much of the through traffic is diverted in Weston, and enters Boston via the Commonwealth Avenue boulevard.

Worcester to Athol.

During the last two years much work has been done in Rutland on the road leading to Oakham. In 1914 the town and the State each contributed $2,000.

In the town of Oakham work has also been done, the town and the Worcester County commissioners contributing $1,000 this year, which was used with $1,500 allotted by the commission.

Work is also being done on this route in the town of Barre, the town and the commission each putting in $3,000, making $6,000 available this year.

In the town of Petersham, on this route, work has been proceeding for several years at the joint expense of the town and the State. A gravel road has been built from the Athol line to the village. Last year and this year the work was done on the

road leading from Petersham to Barre, a gravel road having been constructed. This year the town and the commission each put in $1,800.

Some years ago the town of Athol co-operated with the commission in improving a part of the road in Athol leading to Petersham, the town and the State each paying one-half. There still remains about three-quarters of a mile of road in Athol on this route which requires rebuilding, and it is hoped that the work may be done next year.

This is quite an important secondary route through the State, as it saves many miles in traveling from Providence or Worcester, or from any point in southeastern Massachusetts to any point in New Hampshire or Vermont west of Athol, or to Greenfield, North Adams or Williamstown.

Providence–Worcester–Fitchburg.

The commission has been working for many years upon this main through line in the central part of the State. Many towns on the route have co-operated in the work either by paying a part of the money or by building the sections of road through the villages.

In the town of Blackstone the State highway to the Rhode Island line was completed, the town contributing $8,500. The drainage conditions on this road were very poor. There was a car track and sidewalk the whole length. A concrete arch bridge was built, the street railway company paying its proportionate part of the cost of the bridge, as well as the cost of surfacing their track with tar macadam the whole length of the road. The entire width of the road was surfaced with tar macadam (penetration method) from the tracks to the curb line, a cobblestone gutter being necessary most of the way.

In the next town, Uxbridge, the road had already been improved for a considerable length, under the small town act, at the joint expense of the town and State. This year the town built a new concrete bridge on this line and contributed $5,000 toward the cost of constructing about 1 mile of State highway north of the town toward Northbridge.

In Northbridge the commission last year constructed a section of State highway from the Grafton line southerly to the village

of Rockdale, and the town co-operated by building a part of the road through the village. This year the town continued the construction of its village road, and the commission constructed a section of concrete road beginning beyond the railroad crossing south of the village and extending southerly towards Uxbridge.

In Grafton, the next town, the commission and the town have been constructing the road for the past few years. This year the town contributed $3,000, and a section of State highway was built extending southerly from the end of last year's work toward Northbridge; this completed about one-half of the uncompleted road to the Northbridge line. It is expected that the remainder of the road will be constructed next year.

On the continuation of the route northerly from Worcester to Fitchburg, the town of Sterling last year constructed a tar macadam road through the village. The commission had already constructed a State highway south of the village to the West Boylston line. Last year it constructed a section of State highway from the village of Sterling northerly towards Fitchburg, about three-quarters of a mile in length. This work was continued this year at an expense of about $22,000, about 1½ miles of State highway being constructed, to connect with the existing State highway leading to Leominster and Fitchburg.

The road in Sterling, both north and south of the village, has been constructed with a surface 2 inches in thickness, made of a mixture of selected gravel, heated and mixed with hot asphaltic oil, this thoroughly mixed in a mechanical mixer, every particle of gravel being thoroughly coated. It was then teamed, while still hot, and spread from a dumping board, as evenly as possible, upon the prepared foundation of broken stone and gravel. To insure an even distribution, it was carefully raked to a true crown and surface, the crown being one-quarter of an inch to the foot. A sufficient quantity was spread to insure a uniform thickness of 2 inches after rolling, the rolling being done with a light tandem roller. This material was spread 18 feet in width, the road having a gravel shoulder. A copy of the specifications will be found annexed to the report of the chief engineer.

The commission built some experimental sections of this kind of road surface in 1909 on main routes in the towns of Wenham and Wayland, and these sections are still in good condition. It

is calling particular attention to this type of construction, because it seems very satisfactory, and it is probable that a road of this character will prove economical, except under a traffic of extremely heavy vehicles, provided care is taken in its construction and in the selection and mixing of the materials. Like any other road, proper drainage and foundation are absolutely essential.

On this route there is still a bad section of road in the town of West Boylston, which the commission expects to construct next year.

Boston and Salem.

In Salem, on the Floating bridge road, which was on the old Salem turnpike, there was a very bad piece of road from the Lynn line to a point near the high school. It is entirely outside of the city proper and has but few houses on it. The commission laid out and constructed this year about 1½ miles of State highway on this road, and there is about half a mile more now under construction. A bituminous macadam road, 18 feet in width, with a 3-foot shoulder on each side, has been constructed, asphalt being used by the penetration method. This road cost $25,000, a foundation being necessary for the entire length of the road.

When the half mile now under construction is finished, the road in Salem will be built to the point to which the city agreed to construct, just south of the high school.

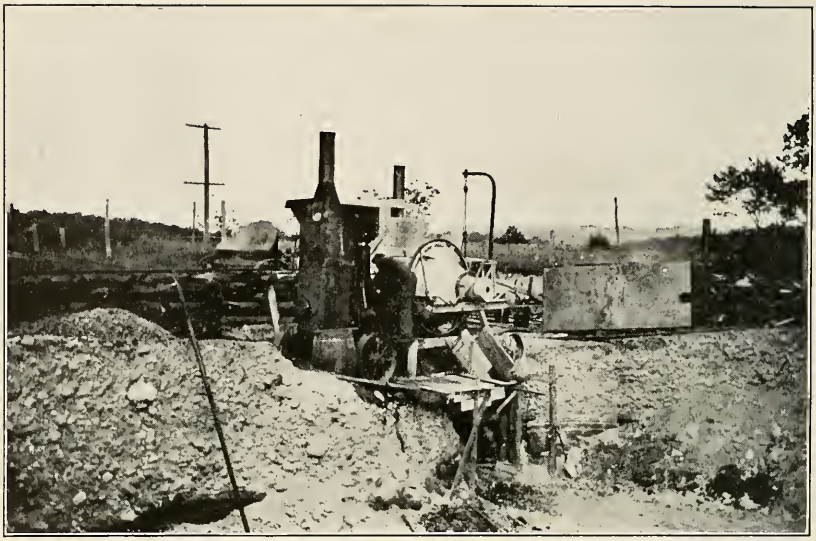
The commission has been informed that the city of Lynn intends to reconstruct its road on this same line as far as the Floating bridge. This will leave about half a mile of the road in Lynn, between the Floating bridge and the Salem line, still to be constructed.

Salem to Lawrence.

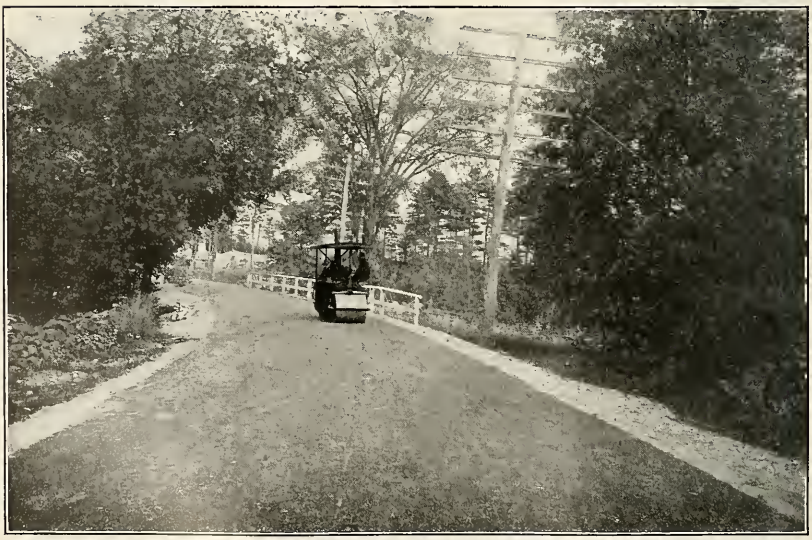
For the last three years the commission has been building on the highway between Salem and Lawrence in the towns of Middleton and North Andover.

North Andover Concrete Road.

In North Andover a concrete road was constructed last year, and this character of construction was continued this year, the width of the roadway being 19 feet. Though many miles of con-



Gravel Asphalt Mixing Plant, Sterling.



Gravel Asphalt Road, Shirley.

crete roads have been built in the western States, and quite a few miles in other eastern States, a road of this type is still somewhat of an experiment. Time alone will tell whether it will prove economical, satisfactorily carry the traffic and withstand our climate. Undoubtedly, if the surface does not wear well, the concrete can be used as the foundation for some form of bituminous top.

As was stated in last year's report, the concrete road in North Andover was built through a territory where the soil was wet and the drainage conditions extremely bad. Most of the road was built with joints usually 30 feet apart.

At the center and on each side of the road levels were taken in the fall, and again in the winter when the frost was in the ground. The levels showed that practically the whole road was thrown by frost. On certain sections it was thrown much more on one side than on the other, the maximum vertical frost movement being about 6 inches. Wherever the road was lifted by the frost much higher at the center and on one side than on the other side, longitudinal cracks were caused. These cracks developed or opened up when the frost came out of the ground in the spring. Wherever the road was lifted about 1½ inches higher at the center and on one side than on the other, these cracks appeared.

In some places the road was thrown more on one side than it was on the other, but it was lifted evenly from side to side, and where this occurred there were usually no cracks.

On a part of the road side drains were put in and a gravel foundation was used, and on these sections the road was not lifted unevenly and no longitudinal cracks developed. In two places the slabs did not settle back evenly, and the end of one slab is higher than the other.

As a matter of fact, the soil and water conditions were so bad on the whole length of this road that the engineers would have considered that a foundation of gravel or stone under the concrete and side drains was necessary for its entire length. Such a foundation would have been necessary had any form of bituminous macadam road been built instead of the concrete, greatly increasing the cost of construction; but, as was stated in last year's report, the commission decided to try the experiment

of building the concrete without a foundation, because, if it did prove successful, it would be cheaper than a bituminous macadam road with the necessary foundation.

The results of this experiment up to the present time show that the concrete will stand upon fairly bad and wet soil, but that where conditions are so bad that the concrete is lifted from 2 to 6 inches more on one side than it is on the other, it will crack longitudinally. On this particular road these conditions occurred on less than one-quarter of the length. All of the slabs that have cracked could be replaced, and a foundation constructed under them, for much less than it would have cost to construct originally a foundation under the whole road.

At the present time it does not seem to the commission or its engineers that the cracks are really serious; they constitute blemishes rather than serious defects. The cracks that have developed, as well as the joints that were made between the slabs, have been filled with tar and sand, which have also been used in the two places where one slab is higher than the other, with the result that the road is very satisfactory to ride over.

It appears now that the tar and sand will prevent the cracks and joints from breaking down much on the edges and causing holes to develop. If the road wears well under traffic, and is not injured by frost in the future much more than it was last winter, the experiment will have proved a decided success.

On the concrete road built in 1913 a number of different methods and several brands of cement were tried. The concrete was all mixed in a mechanical mixer. It was all one-course work, with a continuous mix. On most of the road a 1–2–4 mixture was used. On a part of the road a 1–1½–3 mixture was used. On the whole road a heavy templet, shod with iron, was used. The concrete was all covered with from 1 to 2 inches of sand or loam, and this was kept continually moist for at least ten days.

On some sections the subgrade was crowned, and the concrete was laid at a uniform thickness of 6 inches, with a crown of one-quarter of an inch to the foot. On other sections the subgrade was flat and the concrete was 8½ inches thick at the center and 6 inches thick at the sides. Still other sections were 7½ inches thick at the center and 5 inches thick at the sides.

On some sections a triangular reinforcement was used, the only benefit apparent up to the present time being that the longitudinal cracks do not open up as much as at the other points where reinforcement was not used and the frost action was similar.

On most of the road there were contraction joints across the road 25 to 30 feet apart, dividing it into sections. On some of these joints steel protection was placed with tar paper to the bottom of the concrete; on other joints tar paper only was used.

No difference has yet been observed between the different brands of cement. All the cement used had to pass the standard tests.

The stone used varied from one-half inch to 2½ inches in diameter. The sand was all clean, sharp and of medium fineness. The experience of the commission shows that fewer cracks develop where the subgrade is level and the concrete is thicker at the center, and it would seem that this practice should be followed wherever the natural soil is bad and frost action may be expected.

This year the work was continued, over 1 mile of concrete road being built. The mixture was 1–1½–3 on some sections, and on others a 1–2–4 mixture was used on the bottom and a 1–1½–3 on the top, the whole being laid in one course at one time. The concrete was 8½ inches thick at the center and 6 inches thick at the sides.

On a part of the road three thicknesses of tar paper were used in the joints, and on a part a prepared asphalt paving joint was used, three-eighths of an inch in thickness. The joints were placed from 25 to 30 feet apart, because practically no lateral cracks occurred in last year's road where the joints were this distance apart, except where there was severe frost action.

The commission has built two other concrete roads, one in Northbridge and the other in Taunton. Practically the same methods were used on these roads, except that on the Northbridge road a washed gravel was used, a good quality of gravel being available. On both these roads the subsoil is such that the frost action will not be excessive.

The cost varied from about $1.25 to $1.45 a square yard for the concrete of an average depth of 7¼ inches.

Middleton.

In Middleton, on this same route, about 1½ miles of bituminous macadam road was constructed, a refined tar being used by the penetration method. The whole road required a gravel foundation. The cost was nearly $27,000, because of the grading and ledge work and the necessity for drainage and foundation.

The county of Essex and the town of Middleton co-operated by paying $1,000 toward the cost of constructing a drainage system and extending the road to the square, the commission allotting $3,500 from the motor vehicle fees fund for this purpose.

A small bridge had to be reconstructed upon a pile foundation. The Bay State Street Railway Company is paying its share of the cost of the bridge, and has made the required changes in the location of its track in the village square. It has also paid for the additional expense incurred by reason of elevating its tracks in Middleton and North Andover.

Margin Street, Peabody.

There was a short piece of road in Peabody, about three-quarters of a mile long, on the main road between Salem and Danvers, that was in very bad condition. This road was very much used and was on the outskirts of Peabody.

The Essex County commissioners were petitioned to lay out and improve the road. They made the layout and necessary widening, and agreed to contribute toward the amount the town was to pay. An agreement was made between the selectmen and the commission, whereby the town and State were each to bear one-half of the cost of construction, the total estimated cost being $18,000.

A contract was let, and a bituminous macadam road 21 feet in width, with a 3-foot shoulder on each side, was constructed and open for travel early in the fall. Asphalt was used by the penetration method.

Boston to Lawrence.

This route has been completed for some years, but the old State highway in Stoneham and Reading was so nearly worn out that the heavy trucks and teams broke through the surface in

many places. The macadam was only 15 feet in width, and the whole road needed widening, strengthening and resurfacing.

Consequently, a contract was let for the work, and over 2 miles were resurfaced. The hardened surface was made 18 feet in width, with a 3-foot shoulder on each side. An asphalt macadam top was constructed by the penetration method. The old base was picked up and new stone added where necessary, and the subgrade thoroughly rolled.

Newburyport Turnpike.

The commission has been working on this main line for the last five years, securing as much co-operation from the towns as possible. The whole length of the road, 26 miles, has been widened and improved with a gravel surface, kept shaped and patched by from three to five maintenance gangs. The road has been shaped with a road machine or dragged once a week, and usually after every rain.

The automobile traffic has increased steadily since the road has been improved; and as the road is straight, and in a sparsely settled country, the speed of the motor vehicles which pass over it is so great that the surface cannot be maintained in good condition, even by constant work.

Every Monday morning, during the good weather, the road is rutted, especially on the hills. This was true to a certain extent last year, but this year it applies to the entire length of the road.

Last year a part of the road was oiled with a light asphaltic oil in Saugus and Lynnfield and on some of the hills beyond. This year it was oiled in Saugus, Lynnfield, Peabody, Danvers and Topsfield. Next year it must be oiled for its entire length, if it is to be maintained in reasonably good condition. This will require co-operation on the part of the towns.

On a part of the road where there is considerable heavy teaming and quite a few motor trucks, the gravel road is not strong enough to stand the traffic, and the road should be reconstructed of stronger materials.

The town of Topsfield appropriated $1,000, or about one-third of the cost of maintaining the road in that town.

In the town of Newbury the county commissioners of Essex

County were replacing the old wooden bridge over Parker River with a new bridge. A portion of the turnpike was therefore closed to travel, and a detour had to be made via Dummer Academy. Newbury appropriated $1,250 for the improvement of this road, and petitioned the commission for aid, and an allotment of $1,250 was made to match the town's appropriation. About 2 miles of this road was widened, graded and surfaced with gravel, and that portion of the turnpike in Newbury which was still open for travel was maintained.

The commission allotted in all $8,250 this year, from the motor vehicle fees fund, for the work above described.

During the last five years the commission has spent over $44,240 from the motor vehicle fees fund upon this road, and the towns have contributed $9,720, a total expenditure of $53,960.

All of the money allotted by the Board for this purpose has been obtained from the motor vehicle fees fund, and this is only one of the many stretches of road that could not have been improved if these fees were not available.

Boston to Lowell and New Hampshire.

The road from Boston to Lowell via Tewksbury has been completed for several years. This year the city of Woburn reconstructed a part of the road through that city, about three-quarters of a mile in length, connecting with the State highway, the county of Middlesex paying a portion of the cost.

The commission has laid out and constructed a short piece of road in Tyngsborough, to fill in the gap between Lowell and the New Hampshire line, on the route to Nashua. This road was surfaced with macadam grouted with tar and sand, mixed hot and poured into the broken stone. This form of construction will be more fully described elsewhere.

On the road from Boston to Lowell via Billerica, work has been in progress for several years in the town of Billerica, the town and State co-operating. It connects with the State highway in Burlington and Winchester and so on to Boston through Cambridge. This year the work was continued, under the provisions of the "small town" act, the county of Middlesex, the town of Billerica and the State each contributing $2,500.

Lowell to Lawrence, Haverhill, and the Beaches.

The section on the new River Road, so called, between Lowell and Lawrence in the towns of Dracut and Methuen, which was required to be constructed by the counties of Middlesex and Essex and by the commission under various special acts of the Legislature, was practically completed last year, and the details will be found in last year's report. The small amount of work that remained to be done was completed this year.

The approach to the city of Lowell on this main line is very poor. The city authorities have been considering the improvement of this route in the city of Lowell, and have asked the commission for engineering advice. The ground was looked over by the Middlesex County engineer, the city engineer of Lowell, officials of the Bay State Street Railway Company, and one of the engineers of the commission, and it was deemed best to make a survey of a new road, on the so-called Indian Orchard route. It is understood that this survey has been made, and that plans and estimates have already been prepared, or will be at an early date. It is certainly to be hoped that the city will make the much-needed improvements on this main route.

In the city of Lawrence the short piece of State highway on the line to Haverhill and New Hampshire had been in bad condition for years. It has to carry a heavy city traffic, as well as large numbers of automobiles and motor trucks. In one place the road was badly congested, and the drainage conditions were unsatisfactory.

This matter was taken up with the city of Lawrence, and a member of the commission and one of its engineers met Mr. Paul Hannagan, representing the city, and went over the ground with him, with the result that the city made the necessary widening at once and constructed the necessary drainage system.

The street railway tracks were relocated, and the city of Lawrence took the contract to do the work through the acting mayor, Mr. Paul Hannagan. A granite block pavement was laid, grouted with cement, and a curbstone was laid by the city. The street is now in excellent condition, a most satisfactory piece of work having been done.

On this route along the Merrimac River the Essex County commissioners were directed by the Legislature of 1912, chapter 591, to lay out and construct a highway from the pumping station in Lawrence to a point on Lowell Street in the town of Methuen, east of Bartlett's Brook, and were authorized to borrow $60,000 for this purpose.

This new road is about 2 miles in length. For a certain distance in the city of Lawrence there was an old road already laid out and constructed. The greater part of the road, however, is in the town of Methuen. The county commissioners made an excellent layout, 70 feet in width, except for the short section in the city of Lawrence. There is a double car track on the southerly side of the road, the railway company having paid its proportionate part of the expense; and there is a 40-foot location for the roadway on the northerly side.

A contract was advertised and let, and the highway is practically completed, only a small amount of work remaining to be completed in the spring. A good gravel road has been constructed, with the necessary drainage, guard rail, etc.

By the terms of the act, upon the completion of the laying out and construction of this way, the commission is directed to lay it out as a State highway; and this will be done early next year.

As there will undoubtedly be a large amount of traffic over this road, and a large number of heavy trucks, the commission will probably surface it with some form of bituminous macadam to enable it to withstand the traffic.

The old road in Methuen, connecting this new river road with the one that was built in Dracut and Methuen, should be widened, repaired and resurfaced in the near future.

From Lawrence, through Haverhill, Merrimac and Amesbury to Salisbury, the road has been improved for almost its entire length, much of it being State highway, outside of the thickly settled portions in the villages.

In Salisbury there was a bad stretch of road from the square to the beach. There is a great deal of traffic on this road to and from the beaches, especially since the highway was built back of the beach to the New Hampshire line, where it connects with the New Hampshire highway along the shore to Portsmouth. Last year the commission laid out and constructed a piece of State highway from Salisbury Square towards the beach

This year $26,000 was allotted, the work was continued and is nearly completed, extending from last year's work to the beach where it connects with the highway already constructed leading to New Hampshire.

The Massachusetts & Northeastern Street Railway Company has very willingly co-operated with the commission in this work. Over a part of the way the highway was relocated along the street railway track, and in part over a location owned by it. This was done to straighten the road, as well as to avoid crossing the street railway at grade.

The contract was let to the town, and the road constructed on a gravel base, with a bituminous macadam surface, asphalt being used by the penetration method.

The town of Salisbury this year appropriated $10,000 to surface the square. All of this appropriation has not been expended; and it is the intention of the town authorities to use the balance in the improvement of the road back of the beach and south of the State highway.

Boston to Provincetown via Plymouth.

The line from Boston to Plymouth via Scituate has been completed for several years, the whole length being either State highway or improved town road.

There has been considerable demand for the construction of the shorter route to Plymouth on the old turnpike via Queen Anne's Corner and Hanover Four Corners, in the towns of Kingston, Duxbury, Pembroke, Hanover, Norwell, Hingham and Weymouth.

As the other route has already been constructed as a State highway, it seems that any improvement on this parallel route should be made by co-operation between the towns or the counties interested and the commission.

Already the town of Duxbury has appropriated $10,000 to be used with a like sum to be furnished by the commission in constructing a State highway from the Pembroke line southerly. A contract has been let for the construction of this road, and a local stone macadam road is being constructed, refined tar being used by the penetration method.

Work has been done in Pembroke this year at the joint expense of the town and State, a gravel road being built.

The road through Norwell has already been improved at the joint expense of the town and State.

The commission hopes that in the near future all the towns on this route will co-operate with it in improving the entire length of this highway.

The commission has been building sections of State highway in Plymouth, toward Bourne, for many years. This year the road was completed to the Bourne line, thus making a State highway in Plymouth about 12 miles in length.

The commission also built upon the continuation of this road in Bourne last year and this year, the road being completed to a point within a few hundred feet of the new bridge over the Cape Cod Canal at Sagamore.

There are about 5 miles of water-bound macadam on the Plymouth end, and the rest of the road has been built of sand and asphaltic oil. On most of it, the mixing method was used. The commission has found that in a sandy country where neither stone nor gravel is available, a road of this character can be built for much less than the cost of a macadam road. In some localities the cost would be less than one-third of the cost of macadam.

The surface of sand and oil alone costs about 50 cents a square yard. A road of this character will withstand a large amount of automobile traffic and a reasonable number of light teams, but would not carry many heavy teams.

The completion of this route makes an alternative route to points on the Cape below Bourne, and is somewhat shorter than the old route via Middleborough. It is already used by a large number of automobiles, and the traffic is constantly increasing.

The completion of the State highway in Plymouth and Bourne makes a continuous good road from Boston to Provincetown via Plymouth.

The roads on the Cape below Bourne have been kept constantly oiled and patched. Several of the corners and bad turns have been widened and improved, and that work will be continued in the future.

The commission has prepared plans for laying out as a State highway about 9 miles of the road in Wellfleet and Truro, where the road has been improved for several years by allot-

ments made from the motor vehicle fees fund. This year the road in Truro was widened at twenty-two places, at a cost of about $2,300, the widenings varying from 3 to 10 feet. It is expected that the county or the towns will agree to pay any damages that may be incurred by the laying out of a highway of sufficient width to provide for future needs.

Boston to the Cape via Brockton and Middleborough.

There have been a number of roads improved in the last few years on this route.

Boston to Brockton.

In the town of Avon a section of State highway is now being constructed, between the Brockton line and Avon Square, a distance of about 1¼ miles. The town is paying $6,000 towards the cost of construction, and an asphaltic macadam road, 18 feet in width, is being constructed, with 3-foot shoulders on each side.

In Randolph the existing road from the Avon line to Randolph village is too narrow: it needs to be widened and constructed. The commission has taken the matter up with the town authorities and with the Norfolk County Commissioners, to see if a proper location, wide enough for all future needs, cannot be secured.

The commission has agreed to lay out the road as a State highway, and to construct a suitable road from the Avon line to the village of Randolph, if the town or county will provide a location of suitable width. A number of hearings have been held as well as many conferences, and it is believed that this road will be improved during the coming year.

From Brockton to Wareham the road has been constructed for several years, either as State highway or as improved town road.

Wareham.

The bridge at Onset, commenced last year, was completed and opened for travel this year. The total expense was about $40,000. Of this amount, the town of Wareham pays $15,000, the county of Plymouth one-quarter of the entire cost, the street railway company $5,000, and the commission the balance.

A 3-span concrete arch bridge has been constructed, with a sidewalk on one side. The bridge is about 225 feet in length.

There are several dangerous corners and curves in the State highway in Wareham. Near Tremont village there are two blind right-angle corners that can be done away with if a short section of new road can be laid out and constructed. There are also several bad curves that can be improved. There is a narrow and dangerous bridge over the railroad, with right-angle turns at each end, where there is hardly room for two automobiles to pass each other even though extreme care is exercised. There is also a dangerous underpass, with blind approaches.

At all of these places a great improvement can be made by relocating the road at one place and by widening the corners and curves at others, also by widening and changing the alignment of the bridge over the railroad.

The commission has taken this matter up with the Plymouth County commissioners and with the selectmen of the town of Wareham, and it is hoped that with the co-operation of all the parties interested these much needed improvements can be secured and the road thereby made safe.

It is estimated that these improvements will cost something over $10,000, and the commission has offered to see that they are made if the county or the town will pay the land and grade damages and $3,000 towards the cost of doing the work.

Before any change can be made in the bridge over the railroad or in its approaches, some agreement will have to be made with the officials of the railroad company.

Cape Cod Canal.

In Bourne a new bridge has been built by the canal company at Buzzards Bay. The road through Bourne to Falmouth and Woods Hole has been built by the State and the towns, and is now in good condition.

South Side of the Canal.

Last year the town of Bourne agreed to construct the road on the south side of the canal, on the new location provided by the canal company, from the new bridge to the Sandwich line, provided the commission would in the future extend the State highway on the north side to the new bridge at Sagamore. The

town asked the Board to furnish plans, specifications and engineering advice and supervision.

A macadam road with an oil blanket top was begun last year and finished early this spring, costing about $35,000. In the meantime the graded road on the north side of the canal remained open for travel.

North Side of the Canal.

The commission this year constructed over 2 miles of road on the north side of the canal.

The town of Bourne made a new location on a part of the road near Bournedale, to eliminate two dangerous corners. A new road was laid out and graded to provide a better approach to the new bridge over the canal at Sagamore.

The commission constructed a tar macadam road, by the penetration method, using local stone. Something over half a mile of this road remains to be done; the work will undoubtedly be completed early next year.

The completion of these two stretches of road makes a continuous good highway from Brockton via Middleborough to Provincetown.

Mashpee.

The commission laid out and constructed a State highway in Mashpee, filling in the gap between last year's work and the road to Marstons Mills, a portion of which had been already improved under the "small town" act.

About 1¼ miles of road were built of sand mixed with asphaltic oil at a cost of about $7,000. A short piece of the road is located in Sandwich.

This road provides a connection between Falmouth and Barnstable, and thence to Chatham. The road is already constructed from Chatham to Orleans, connecting there with the road on the north side of the Cape to Provincetown.

Brockton–Stoughton.

This road connects Brockton with Stoughton and with the main State highway from Taunton to Boston, furnishing a good route from Brockton to Boston via Canton, Milton and Mattapan.

Brockton had constructed the road within its limits to a short distance from the Stoughton line, but the road in Stoughton was

in very bad condition and was practically impassable in the spring. The city authorities agreed that if the commission would construct the 3,000 feet that remained to be built in Brockton to the Stoughton line, the city would construct a section of road in Brockton to connect with the State highway leading to Whitman, connecting there with a main line to Boston via Weymouth and Quincy. Both of these pieces of road have been constructed.

The question of improving the road in Stoughton was taken up with the authorities of that town, the commission agreeing that it would pay two-thirds of the cost if the town would pay the remainder. The town of Stoughton appropriated $5,000, the commission allotted $10,000, and a contract was let for the construction, which has practically been completed for the distance of over 1¼ miles, beginning at the Brockton line and extending northerly. About the same length of road remains to be built, and it is expected that the work will be continued next year by co-operation between the town and the State.

Boston to Bridgewater.

This road has already been improved in Quincy and Weymouth and part of the way in Abington.

Last year the town of Abington co-operated with the commission by building about half a mile of road on this route through the village of North Abington, the commission building a piece of State highway from this village toward Abington. It is hoped that next year, with the co-operation of the town, the work may be continued to the Whitman line.

Last year the town of Whitman contributed $5,000, and the commission allotted an additional amount necessary to build 1½ miles of State highway from the East Bridgewater line northerly toward Abington, this being the worst section of the road. This year the rest of the road in Whitman to the Abington line was completed, the town paying one-third of the cost. Both sections are surfaced with tar macadam.

When the road in Abington is completed, this route will furnish a very good road, either State highway or improved town road, from Quincy to Bridgewater, and thence to the Cape via Middleborough.

Boston to Taunton and New Bedford.

Practically all of this route has been improved during the last few years, either by the State, or the State and municipalities jointly, or by the municipalities themselves.

A few stretches of road are beginning to show signs of wear under the increasing traffic, and will require reconstruction and strengthening in the near future.

Middleborough to New Bedford.

In Freetown a section of road on this route has been constructed, the town and county each contributing $4,000 and the commission allotting $8,000 from the motor vehicle fees fund. About 2 miles of road have been constructed of local stone macadam, with a surface application of asphaltic oil.

Taunton to Middleborough.

The city of Taunton expended $10,000 in constructing a piece of road from East Taunton village toward Middleborough, and the commission laid out as a State highway that part of the road leading from the Lakeville line toward Taunton, for the distance of about 1½ miles. About 1 mile has been surfaced with concrete, and the remainder of the road will be surfaced early next year.

The road in Lakeville and Middleborough has already been improved, the commission having assisted in Lakeville under the "small town" act.

Boston to Taunton and Fall River.

The city of Taunton and the commission both constructed short pieces of road on this route, to connect up with the State highway to Dighton.

In Dighton village there were some very dangerous right-angle corners on this main through route; also a narrow causeway south of the village, where a wider roadway and new bridge were needed. The commission has been consulting with the officials of the town of Dighton, for the past three or four years, with a view to making the various needed improvements. Plans were

made for the improvement of the corners and for relocating the road along the street railway location, this providing a wider and straighter roadway.

The town finally agreed to take the land necessary to improve the corners and to pay all the damages occasioned thereby; also, to pay $5,000 towards the cost of constructing the road.

The officials of the Bay State Street Railway Company were consulted, and they agreed that the new road might be constructed along their location, and that filling might be substituted for their trestle. They also agreed to pay $2,500 toward the cost of the filling and the construction of the bridge.

The commission allotted $13,000, and a contract was let for the construction of the road, which is now practically completed. Subsequently, at the request of the town, the commission agreed to excavate some ledge at one of the curves, to give a better view, the town bearing half the expense, as it desired to get room for a sidewalk.

Now that this road has been constructed, there is a continuous line of good road, except for a very short stretch near the Somerset-Dighton line, all the way from Boston to Fall River via Taunton.

Boston to Providence.

On the main route between Boston and Providence there is practically a continuous line of State highway from Dedham to the Rhode Island line, except in the villages and thickly settled localities. For several years the commission has been co-operating with the local authorities in improving the bridges and portions of the road.

This year the commission laid out and constructed about 1½ miles of road in Dedham, beginning near the bridge at the Boston line. An asphalt macadam road, 18 feet in width, was constructed, with a 3-foot shoulder on each side. A gravel foundation was necessary on part of the road. The work is completed and the road open to travel. The cost of the work amounted to about $25,000.

The town of Dedham has agreed, at its own expense, to widen and construct the continuation of the road to the court house, a distance of about one-half mile.

One of the worst pieces of road on this main through route

was in Wrentham, just beyond the village. The street was very narrow, and really dangerous because of the large number of vehicles that had to use it.

Surveys were made to determine what could be done to improve conditions, and the question of relocating the street railway track was taken up with the officials of the street railway company. Because of a large number of fine old trees that encroached upon the road, and were too valuable to cut, the road was not made as wide as it would otherwise have been.

The town agreed to bear all the land damages and to pay $2,500 toward the cost of construction, and the commission allotted $10,000 to be used with the town's contribution. A contract has been let for the work, the street railway tracks have been relocated, and the street widened as much as was possible without removing the fine trees. The work of drainage and grading has been done, and the bottom course of stone has been laid and rolled, leaving the road in very good condition for winter travel. When the cold weather set in, the work was discontinued for the winter, but the bituminous surface will be put on as soon as the weather is suitable in the spring.

Many sections of State highway on this route have been widened, and a few of the older sections have also been resurfaced; but, with the increasing traffic and especially the large numbers of motor trucks, many miles still need widening and strengthening.

Chilmark and Gay Head.

As was stated in last year's report, a contract was let for the construction of a highway from the layout previously made in Chilmark to a point near the lighthouse in Gay Head. The county contributed $7,500, and the commission allotted $21,000 for the construction of this road, which has now been completed. It has been opened to travel, though not entirely completed, since August.

The whole road is nearly 5 miles in length. The first 2 miles are built of local broken stone, and will be coated with light asphaltic oil.

The remaining 3 miles of road are built of sand and clay, enough clay being used to fill the voids in the sand; the whole depth being thoroughly harrowed to insure a uniform mixture of

the sand and clay, the road being then well shaped and rolled. Mr. Logan Waller Page, director of the office of public roads at Washington, furnished an engineer to direct and superintend this particular construction, and the work has been done under his supervision.

It remains to be seen whether a road of this character will be affected by the climate in this locality, and, also, whether by constant maintenance it can be kept in good condition, as it will be used by large numbers of automobiles. An asphaltic oil has been used on the surface on some short sections of the road, to determine whether or not that treatment will prove satisfactory.

The old road was almost impassable for automobiles. It was crooked and narrow, had steep grades, and the whole surface of soft sand was always deeply rutted, so that a team of horses could only haul a light load over it. Since the road has been made passable, it has been used by large numbers of automobiles from all the villages on the island.

The Indian settlement at Gay Head and the famous colored clay cliffs have always been of great interest to the public. These wonderful "painted cliffs" are extremely beautiful. They are one of the most interesting natural curiosities in the United States. The commission feels that some proper action should be taken whereby these cliffs, with an adequate approach, will be preserved for the public for all time.

In years passed large amounts of clay have been taken from these cliffs, and if the excavation had been continued the cliffs would have been destroyed. They could be preserved for a relatively small cost at the present time. Enough of the upland should also be secured to preserve them for all time (as they gradually wash away) and to provide a place which the public can use and from which it can enjoy their natural beauties.

Trees on State Highways.

In 1914, as for the past few years, the work of suppressing insect pests on the trees on the State highways has been done under the direction of the State Forester, Mr. F. W. Rane. The results obtained have in general been most satisfactory.

Spraying was required in a number of localities to prevent the ravages of the elm leaf beetle. This pest has made spraying

necessary in many places where it was not required to prevent damage by the gypsy and brown-tail moths.

Mr. Rane's report appears in Appendix C.

During the last ten years 20,825 trees have been planted on the borders of the State highways. This year the number of trees planted on State highways amounted to 3,583 and the commission continued its policy of planting quick-growing trees and hedges to replace guard rails.

Condition of State Highways.

While it is necessary to reconstruct and strengthen many sections of State highway on main routes, it is true that the surface of these roads, as a whole, is in better condition than ever before.

On many miles of road, where there was only money enough to allow the use of a small quantity of light oil last year, merely laying the dust, a second coat of oil has been applied this year, which, when covered with stone or sand, has materially improved the condition of the road surface. Such treatment is, of course, merely a temporary expedient, and does not add to the thickness or strength of the road.

Bridges and Culverts.

The 2 concrete bridges on the Mohawk Trail have been completed, one being a 3-arch bridge over the Deerfield River at Charlemont, and the other a single arch bridge over Cold River in the towns of Florida and Savoy.

A steel truss bridge, 130 feet in length, with a concrete floor, was built on the Revere traffic road over the tracks of the Boston & Maine and Revere Beach railroads.

The bridge at Onset in Wareham was completed, and is described elsewhere.

Twenty-five small bridges or culverts, of spans varying from 7 to 35 feet, were constructed. Nearly all were built of reinforced concrete; 5 were concrete slab, 3 were concrete arches, and 17 were built with reinforced concrete beams and floor.

A number of these culverts or bridges were built to replace old structures, which were unsound or too narrow for safety with the increasing traffic. In many cases the towns paid a part or the whole of the cost of construction.

Designs and estimates were made for 10 other small bridges, of spans varying from 12 to 50 feet, which will probably be built in the future by the municipalities or the commission, one being designed to be used in the abolition of a grade crossing, and another for the widening of an existing bridge over a railroad.

Further details will be found in the report of the chief engineer.

Maintenance and Resurfacing.

With the increasing mileage of State highways, the tremendous increase in automobile traffic, and with the use of heavy motor trucks for long distances to and from the larger cities, the question of maintenance becomes of vital importance. Some State highways are now twenty years old. Their average age is ten years. Naturally, they are becoming worn out, and are not strong enough to withstand the heavy modern traffic.

Very many miles of road that were formerly built of macadam or gravel, from 12 to 15 feet in width, and from 4 to 6 inches in depth, were entirely adequate to carry the local vehicles which used them. The corners and curves were entirely safe for horse-drawn vehicles, but are now dangerous when used daily by hundreds of motor vehicles going at high speed.

What were formerly merely country roads have become main thoroughfares used for intercity and interstate traffic. The roads need widening, the corners and many curves must be improved to make them reasonably safe, and the surface, at least, on main through routes must be reconstructed, using some permanent form of construction that is capable of withstanding the modern traffic.

This will cost a very large amount of money, probably at least from $8,000 to $10,000 a mile; but the work must be planned for ahead, and be done gradually, or in a few years many miles of State highway on the heavily traveled routes between our big cities will give out and go to pieces. The work should be planned and begun now, and at least 100 miles a year should be widened and reconstructed, so that at the end of five years 500 miles of road will have been so improved.

It must be remembered that nearly 500 miles of road have been built for from ten to twenty years, and many miles of these

roads have not as yet been resurfaced. Of course, they are thin, worn out, and beginning to be broken through by heavy motor trucks, which are now so numerous.

Resurfacing and Widening.

The Legislature in 1914 appropriated $250,000 for the ordinary maintenance, oiling and patching of the State highways. It also made an additional appropriation of $100,000 for widening and resurfacing some of the roads that were too narrow and were wearing out. The commission had available, therefore, for maintenance, widening and resurfacing $350,000, appropriated by the Legislature, and about $525,000 obtained from the motor vehicle fees fund, making about $875,000 in all.

The first and most necessary thing to be done was to maintain and keep in as good condition as possible the State highways already built, over 980 miles in length. This was done by constant patching and the use of bituminous covering. The drainage, also, had to be kept open, shoulders in condition, and the trees and shrubs that obstructed the view had to be cut.

On practically all the State highways there were either section men or repair gangs in charge of the maintenance, to keep the roads at all times in proper repair. This repair and maintenance work cost nearly $214,000.

Bituminous materials were used during the year on 516 miles of State highway. On about 429 miles of the length just stated, the material used was a light asphaltic oil or some tar product, applied cold. On many of these roads oil or tar had been used before, and a retreatment was necessary.

At the beginning of the year, the commission had directed the engineers to maintain every mile of State highway in suitable condition, with a view to having as much money available as was possible for widening, resurfacing and strengthening. Acting on these instructions, the engineers accomplished a great deal this year.

About 70.35 miles of State highway were resurfaced at a cost of over $450,000. Of these roads, 37½ miles were also widened from 3 to 10 feet or more.

The hardened surface on these roads was widened to 18 feet

or more, with a 3-foot shoulder on each side. The corners and curves were banked, where possible, so that there would be no excuse for cutting the corners; and the crown of the roads was reduced to one-quarter or one-third of an inch to the foot, so as to spread the traffic over the entire road surface. Where it could be done at any reasonable expense, the hardened surface was made at least 21 feet in width at corners and on the curves, and an unobstructed view was obtained for a reasonable distance by cutting back the banks.

The corners have been improved and a better view obtained, or the road surface widened, at 104 different places, and about 13 miles of road have been widened where no money was available for resurfacing. This work cost over $47,000. While over 50 miles of road were widened, but 37½ of these miles could be resurfaced.

The commission asked the Legislature in 1914 to appropriate $200,000 for this very necessary work, but the appropriation made was only $100,000. With the larger appropriation, many more miles of road could have been widened and strengthened.

The commission considers this work absolutely necessary, not only to prevent the existing State highways from being destroyed by the constantly increasing heavy traffic, but for the public safety. Fifteen feet, the old standard width, entirely adequate ten or twenty years ago, is not wide enough to-day, when every main through route, even in the country, is used so extensively by motor cars and trucks.

The commission has therefore asked the Legislature of 1915 to appropriate $200,000 to continue this necessary work.

Up to the present time bituminous materials have been used either on the surface or in construction on 986 of the 1,039 miles of State highway. There are also a few miles of highway which have been built of concrete, or where a granite block or other pavement has been used.

Traffic and the Cost of Maintenance.

Last year's report contained a number of tables showing the cost of maintaining the roads in France and England; also, tables showing the cost of maintaining various types

of road surface carrying traffic of varying density. Some of the tables showed the cost of maintenance of macadam roads, and the cost per ton per mile per year for each ton transported over the roads, based on the experience of some of the county engineers in England.

This table showed considerable variation in the data relating to the different roads. The maintenance cost per ton per mile per year was as low as $\frac{14}{100}$ of a cent on one road and was over 1⅖ cents on another, the cost on the other 16 roads varying between these figures.

Such a variation conclusively demonstrates that the character of the traffic which the road has to carry, whether heavy loads on iron tires, or automobiles on pneumatic tires, must be carefully studied if the census figures obtained are to be of real value in determining the type of road which should be built in any given locality.

This fact is well illustrated by a table showing the actual traffic and cost of maintenance on certain Massachusetts State highways.

Traffic and Cost on Massachusetts State Highways.

TOWN.	AMOUNT OF TRAFFIC.		REPAIRS AND MAINTENANCE.			CHARACTER OF TRAFFIC.			NUMBER OF VEHICLES PER DAY.			
									HORSE-DRAWN VEHICLES.			
									SINGLE HORSE.		TWO OR MORE.	
	Total Tonnage Per Day.	Total Tonnage Per Year (300 Days).	Cost Per Mile Per Year.	Cost Per Ton Miles Per Year.	Period (Years).	Runabouts.	Automobiles, Touring Cars and Wagons.	Trucks.	Light.	Heavy.	Light.	Heavy.
Ashby,	271	81,150	$266	$0 0038	16	14	65	4	70	16	5	14
Beverly (No. 1),	1,618	485,220	1,104	0023	15	60	278	8	66	46	4	12
Hamilton,	1,199	359,730	200	0006	15	86	334	31	75	39	2	27
Lynn,	3,468	1,040,430	1,081	0010	9	194	1,365	13	28	19	1	14
Medford-Somerville,	1,332	399,570	1,031	0026	6	44	121	49	47	198	2	193
Milton,[1]	1,140	342,210	592	0017	14	15	50	0	30	77	2	88
Saugus,	1,022	306,660	1,334	0044	14	15	58	78	25	190	3	65
Shrewsbury,	1,305	391,500	510	0013	17	76	407	17	64	60	4	36
Truro,	186	55,770	143	0025	17	7	63	1	15	14	1	3
Weston,	1,918	575,280	1,040	0018	15	115	533	30	167	98	5	59

[1] 1909 report used and results increased 70 per cent. to correspond with 1912 report; also, weight of double heavy teams increased from 2.46 to 5 tons.

The State highways were wearing out, and the traffic over them was rapidly increasing. Many miles of road needed widening and resurfacing, as has been stated to the Legislature every year. The Legislature has from time to time increased its appropriation, and also has made available 80 per cent. of the net amount available from motor vehicle fees. The cost for the construction, repair and maintenance of State highways for twenty years is shown in the following table: —

Year.	Repair and Maintenance.		State Highways.		
	Cost.	Miles.	Average Cost Per Mile Per Year.	Miles laid out.	Cost of Construction.
1894,	–	–	–	39.88	–
1895,	–	–	–	50.03	$637,847
1896,	$4,727	89.10	$53 05	37.02	458,581
1897,	13,267	126.01	105 28	53.25	482,076
1898,	20,661	179.26	115 26	42.68	499,783
1899,	24,538	221.94	110 56	44.56	407,309
1900,	33,562	266.50	125 93	49.40	396,459
1901,	31,061	315.90	98 32	61.68	453,826
1902,	59,943	377.58	158 75	53.32	466,743
1903,	55,083	430.90	127 83	74.17	443,972
1904,	51,896	505.03	102 76	60.85	445,745
1905,	57,456	565.88	101 53	56.55	509,007
1906,	68,382	622.45	109 86	47.92	444,655
1907,	106,189	670.37	158 40	39.33	467,944
1908,	147,037 82,628[1]	709.70	323 47	38.40	564,719
1909,	247,985 154,131[1]	748.27	537 39	36.53	431,814
1910,	214,561 289,498[1]	784.80	642 28	52.80	462,165
1911,	213,476 316,603[1]	837.59	632 86	42.00	412,542
1912,	208,687 414,407[1]	879.59	708 39	40.72	366,424
1913,	203,762 595,183[1]	920.31	868 13	60.06	909,063
				980.88	$9,262,674

Average cost of repair and maintenance, 1895 to 1907, inclusive, $105 per mile per year.
Average cost of repair and maintenance, 1908 to 1913, inclusive, $619 per mile per year.
Average cost of repair and maintenance, 1895 to 1913, inclusive, $267 per mile per year.
[1] Motor vehicle fees fund.

These tables represent actual facts in Massachusetts. They illustrate the misleadingness of statistics if read without adequate knowledge of actual conditions.

The weights of the various vehicles are figured upon the English traffic formula, printed in last year's report. The variations in the costs shown are due to various causes, traffic and weight, toughness of stone, whether road has been resurfaced or not, good and bad bituminous materials, and proper and

improper use of materials. A study of each road will prove profitable.

Ashby. — With high cost of maintenance and small traffic, this road can be compared with the Hamilton road, with more traffic and a small cost for maintenance per ton. Built of local stone, comparatively soft, it was resurfaced with the same local stone when the road was about twelve years old, 30 tons being used to each 100 feet of road. It is a country road. It had an application of cold asphaltic oil in 1913, one-quarter of a gallon being used to the square yard of road. Practically, the stone had worn down one-quarter of an inch in a year.

Hamilton. — This road was built of trap rock macadam and is on a main through route. When the road was eight years old, the stone had worn down about 3 inches, and the road needed resurfacing, — automobiles had arrived. In 1907 one-half of a gallon per square yard of the heaviest asphaltic oil that can be applied cold was spread upon the road and properly covered with peastone and gravel. This treatment was repeated for two years. Then one-quarter of a gallon of heavy hot asphaltic oil per square yard was sprayed upon the road and properly covered; this treatment has been repeated once. The road has been constantly kept patched and sanded when necessary. It is in better condition to-day than in 1907.

Beverly. — With a high cost of maintenance per ton mile, this road can be compared with the Lynn road, with a small cost per ton mile. Both roads are on main routes, and both were trap rock macadam. Beverly has a large number of heavy ice teams on 3-inch tires. The road was resurfaced with trap rock when it was eight or nine years old, 30 tons of stone being used to each 100 feet of road. The trap rock had worn down one-third of an inch a year. In 1910 it was coated with one-half a gallon of hot asphaltic oil per square yard, properly covered with peastone and dust. This failed in one month under the heavy ice teaming, though the same material and methods were used on the next 20 miles of road on the same route, and the surface has stood ever since with constant patching and one-quarter of a gallon per square yard of the same oil sprayed on the center of the road, 8 feet in width.

For the next four years the Beverly road was maintained (except where it was resurfaced) by the use of one-quarter of a gallon of cold oil per square yard, two applications being used the first year, one each year since. One-third of the road was resurfaced in 1913 with an asphaltic macadam 2 inches in depth, at a cost of $1.20 per square yard, 2½-inch stone being used, because of the heavy teams and trucks.

Lynn. — This road is of trap rock macadam and connects with Parkway, where only pleasure vehicles are admitted, except on local business. In 1907 one-half a gallon of hot refined tar per square yard was sprayed upon the road, and covered and kept covered with peastone and dust. It was constantly patched with tar and chips. It has been recoated twice with hot refined tar sprayed upon the road and covered as before. It is in excellent condition, but note, — 90 per cent. of the travel is motor vehicles; it has few teams and fewer heavy teams.

Medford-Somerville. — This road is of trap rock macadam, built with 2½-inch stone on top. It is 28 feet in width, with heavy city teaming, — a stone quarry on the side, crushing 100 to 300 tons of stone a day. This road has never been in good condition since it was two years old. It always has some depressions, although it has been constantly patched and all depressions filled with trap rock. Constantly means daily. It has always been muddy. A part of it was resurfaced with asphalt macadam this year, — the portion beyond the stone quarry, — but the whole road needs it. It has been treated with tar, and a part of it has been coated with heavy tar. A portion had three coats of one-quarter of a gallon each of hot refined tar per square yard, covered with peastone, in one year. It failed, was never in good condition, and we are in doubt whether to reconstruct with granite block on a concrete base, with concrete, or to try an asphaltic macadam.

Milton. — This road is of the same character, with many heavy granite teams going over it. The cost has been high because the trap rock wore out so rapidly under the heavy concentrated loads on iron tires.

Saugus. — This road is of trap rock macadam on a through route, with a great deal of heavy teaming, both teams and trucks. The stone wore out over one-half an inch a year. It

needed constant patching with additional stone, and was never in excellent condition except when recently resurfaced. It had 2 to 3 inches of new stone every four or five years. In 1910 it was resurfaced with 3 inches of asphaltic macadam, at a cost of about $1 per square yard. This has stood ever since, but has needed some patching. A portion was built in the fall, when it was cold, and this portion failed. No bituminous work should be done in cold weather, and a temperature of over 60 degrees is vastly better than one of under 40.

Shrewsbury. — This is a through route, — too much heavy hot oil was used on it before we understood how to use oil. One-half a gallon per square yard was applied on two successive years. It rolled, rutted and was always in bad condition. It has cost a good deal to remove surplus oil, smooth off the bunches and rolls and keep it patched.

Truro. — This is a country road, with little traffic, built 12 feet wide, of 4 inches of broken stone on sand, the stone being bound with clay. An experiment, but a failure. The road was constantly raveling and needed more stone. It was widened to 16 feet. New stone was added and rolled in, and it was coated with light oil in 1912 and 1913, and is now in good condition.

Weston. — This is a macadam road on a through route. Refined tar was applied in 1907. The surface was oiled with hot oil in 1909 and 1910, and maintained with patching until 1912, when a portion of the road was resurfaced with a 2-inch bituminous macadam. Two and one-half inch stones of trap rock were rolled hard, about $1\frac{3}{4}$ to 2 gallons to the square yard of a good grade of asphalt being sprayed in under pressure. This was covered with the smaller stone, rolled, and on some portions of the road a surface application was sprayed of one-third to one-half a gallon per square yard, properly covered with peastone and rolled. This cost from 90 cents to $1 per square yard. The road is in most excellent condition, and we expect to have it wear ten to fifteen years with practically no patching, although we may have to renew the surface coating by spraying every three to five years. We have one road of this kind six years old, that has not needed a single patch as yet.

Motor Trucks and Cost of Maintenance.

The difference in the cost of maintenance caused by various classes of traffic is well illustrated by the table printed below, showing how the cost of maintenance increased on ten roads in Middlesex County, England, when a motor bus line was operated over the macadam road.

Mr. H. T. Wakeland, engineer of the county of Middlesex, which is just out of London and has a very large amount of traffic over its roads, has given some very careful figures showing damage caused to roads by motor omnibuses weighing about six tons each when laden. He took certain roads which had heavy traffic and gave the cost of maintenance (not including watering or cleaning) for macadam roads for three years previous to the motor bus traffic, and the cost per square yard for the year 1912–13.

Road.	Average Cost Per Yard Super Per Annum for Three Years Previous to Motor Omnibus Traffic (Cents).	Cost Per Yard Super for 1912–13 since the Advent of Motor Omnibuses (Cents).
A,	13.5	25.8
B,	11.2	33.1
C,	14.1	41.9
D,	15.6	16.9
E,	9.1	15.4
F,	8.7	15.1
G,	5.9	16.8
H,	5.1	11.1
I,	21.5	36.4
J,	16.9	42.9
Average,	12.3	25.6

This shows that the average cost of maintenance for three years before the motor bus came in was about 12 cents a square yard a year. Since the motor bus was put on, the cost has increased to over 25 cents a square yard a year. The maintenance cost to carry 1 ton 1 mile in 1911–12 was 1.2 cents. When the motor bus was put on, the maintenance cost was raised to 1.8 cents per ton per mile. Mr. Wakeland's opinion is that this increase was practically all due to the motor bus. The increased cost of the road upkeep has been found to be about 4 cents per car per mile, or two-thirds of

a cent per ton per mile in the case of a motor bus on rubber tires. In many cases the macadam surface has been practically destroyed by motor bus traffic on hard rubber tires. These were macadam roads in good standard condition prior to the inauguration of the motor bus traffic, and more than sufficient to carry the ordinary traffic. The road authorities should be authorized to direct which roads shall and which roads shall not be used by motor vehicles and motor buses, and Mr. Wakeland states, as do the other county engineers in England, that a license fee of $50 a year for motor trucks is entirely insufficient to pay for the increased cost of maintenance caused by the use of the trucks on the roads.

Increase in Traffic and Cost of Maintenance.

The commission commenced building State highways in 1894, twenty years ago. Practically one-half of the total mileage is about ten years old, and, naturally, the road surface has been constantly worn down by the traffic and needs resurfacing from time to time. In the meantime the traffic has increased enormously because of the use of motor vehicles.

In 1906 there were only 7,327 automobiles registered; in 1914 there were over 84,000, including more than 8,000 motor trucks. In 1909 less than 1,000 motor trucks were registered; six years later there were over 8,000 or 8 times as many. The traffic on the roads had probably increased proportionately. In fact the traffic counts show that the number of vehicles using the roads more than doubled in three years from 1909 to 1912, and it is increasing rapidly year by year.

The increase in motor cars is clearly shown in the following table: —

Statement showing the Number of Motor Cars registered and Licenses issued, 1906 to 1914.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.
Autos (pleasure),	6,572	7,733	18,066	23,011	29,792	36,284	46,096	56,712	68,100
Dealers' autos,	755	455	1,905	2,455	3,305	4,920	6,301	7,462	7,898
Trucks,	–	–	–	960	1,568	2,623	4,036	5,948	8,053
Total number,	7,327	8,188	19,971	26,426	34,665	43,827	56,433	70,122	84,051
Operator and chauffeur,	10,083	10,696	13,170	18,251	41,259	51,950	66,645	81,034	95,577
Total receipts,	$33,085	$92,096	$121,488	$169,973	$374,789	$477,417	$616,245	$764,153	$914,119

Prior to 1907 certificates of registration did not expire annually.

Prior to 1909 trucks were not classified.

Between 1903 and 1907 all automobile registration fees were $2. In 1907 the automobile registration fee was increased from $2 to $5. In that year 9,006 cars, registered at $2, were re-registered in the same year at $5.

Beginning Jan. 1, 1910, the automobile registration fees were based on the horse powers of the vehicles, the fees varying from $5 to $25. The fee for registration of a truck, however, was $5 regardless of the horse power.

Prior to 1910 operators' licenses did not expire annually, but continued in force indefinitely. Since 1910 all licenses have expired annually.

In connection with this additional cost of maintenance it must be remembered that prior to 1908, when some of the roads were fourteen years old, and the average age was seven years, practically none of the roads had been substantially resurfaced, and all of them had been constantly wearing out.

As was shown in last year's report, the average cost of maintaining over 4,000 miles of main county roads in England was $1,100 a mile a year, and the average cost of maintaining nearly 2,200 miles of road in and around the city of London was $1,680 a mile a year. The costs given include resurfacing or reconstruction as well as ordinary repair and maintenance in England and also in Massachusetts.

It should be remembered also that very few miles of the roads in Massachusetts had been resurfaced, and no considerable quantity of stone had been used to replace the constantly yearly wear, whereas in England they have for years been constantly maintaining their roads and replacing from time to time the yearly wear.

They are now engaged, as are we in Massachusetts, in widening and strengthening their roads and reducing the crown, so that they can withstand the constantly increasing motor vehicle traffic.

Aid to Towns from Small Town and Motor Vehicle Fees Funds.

Since the passage of the so-called "small town" act, the commission has allotted from that fund about $890,000 for the improvement of town ways, and the towns in which the work has been done have appropriated about $610,000, making about $1,500,000 that has been spent in the improvement of about 430 miles of road in 180 towns. A large mileage of road has also been improved on the through routes in the towns, with funds secured from the motor vehicle fees, over $158,000 being allotted from this source in 1914. This year the commission did work in 169 of the towns, using funds available from these two funds.

In the opinion of the commission the work that is done in the "small towns," including the advice given to the municipal authorities, is the most valuable work that the commission and its engineers are doing. This is especially true of the work in the very poor towns, having a valuation of less than $1,000,000, of which there are more than 100 in the Commonwealth.

When work is done under the "small town" act, it is almost invariably done by the local authorities themselves, and in the manner set forth in contracts and specifications prepared and furnished by the commission. The materials must be suitable and used as directed. In all cases the necessary drainage is taken care of.

The work is done under the supervision of one of the commission's engineers; the local authorities who have charge of the roads are being educated in the building of these roads, including the selection of suitable materials, the method of spreading and rolling, and providing for drainage, foundations, etc., where necessary.

The road itself, when properly built, educates the whole community as well as all the people who use it, not only as to the benefits secured from the use of a good road, but also, as time goes on, as to the economy of building a road in a proper manner with adequate drainage, foundation, etc.

The real difficulty comes in convincing the people that constant maintenance is absolutely necessary for the preservation

of a good road. Every year the municipal authorities are realizing more and more the necessity for maintenance, and the number of cities and towns using some form of bitumen, not only to lay the dust, but to preserve the road as well, is increasing.

The commission is doing all in its power to convince all road authorities that constant maintenance is not only absolutely necessary, but will save a vast amount of money.

"Small Town" Work.

Towns of under $1,000,000 Valuation. — The commission this year allotted $95,825 for work in the "small towns" of under $1,000,000 valuation, and the towns themselves appropriated $63,426 to extend the work, making a total of $159,251 available for the work in these towns. The money was allotted to 75 towns, 65 of which made appropriations to be used with the money allotted by the commission.

Towns of over $1,000,000 Valuation. — In these towns under the "small town" act the commission can only allot an amount equal to the appropriation made by the town. Twenty-eight of these towns appropriated $61,279, and the commission allotted $47,300, making a total of $108,579. In several instances in the richer towns, the town appropriated and spent much more money than that allotted by the commission.

There is included in the amounts credited to the towns, in many cases, money appropriated by the counties to aid the town in improving the road, and in a few instances individuals interested in particular roads have also contributed.

The commission makes a contract with the town for the construction of the road, and credits the town with any money it may receive from the counties or from individuals, matching the money available when it is able to, especially in the poorer towns. In a number of towns, the county, the town and the State each contributed one-third of the money required for the construction of certain roads. In this way three times as much road has been improved as would have been possible had only the State's money been available.

Motor Vehicle Fees available for Through Routes.

The commission allotted $158,265 from the motor vehicle fees fund for use on the through routes in 83 towns this year, the towns, with a little help from the counties or individuals, appropriating $135,569, making a total of $293,834 available. This money was used in constructing, improving and maintaining many miles of road on routes that are much used by automobiles.

In many towns the commission furnished the oil or tar that was spread upon the road, the town, at its expense, patching and preparing the surface, spreading the bitumen and covering it. By this work were preserved many miles of road that would otherwise under the motor traffic have raveled and disintegrated, if they were not destroyed in one year. The roads were also made dustless, affording much comfort to the traveling public, and, what is still more important, preventing the dust from becoming an intolerable nuisance to the abutting residents.

The commission feels sure that in the benefit derived from the many miles of dustless State highways and town roads, and in the tire costs and other repair expenses which are saved because of the many miles of improved road, the owners and users of motor vehicles receive each year a value far in excess of the fees paid by them. These benefits would not be possible if the motor vehicle fees were not available for this work.

Five Years Ago and To-day.

In 1909, only five years ago, no motor vehicle fees were available in the towns, and only one-half as much of the State's money was available for work under the "small town" act. That year the commission allotted $68,625 in 78 towns, and 21 towns made appropriations amounting to $43,700. The total amount available was about $112,000.

In 1914 there was available from all sources over $560,000. The roads were improved in 169 different towns, 137 of which contributed various sums amounting to more than $260,000. The allotments made by the commission amounted to about $300,000. Five times as much money was available in 1914

as in 1909. The towns themselves made available over six times as much money in 1914 as in 1909. This is certainly a wonderful growth in five years, showing clearly the constantly increasing desire to secure better roads.

In 1914 the towns made available over $260,000, to be used with money provided by the commission for the work above referred to, and $360,000 more was spent by the cities and towns themselves, under the advice of the commission, in the improvement of their own roads, or a total of $620,000.

The municipalities actually spent more of their own money in 1914 in improving their own roads, under the advice of the commission, than the total amount the State made available in 1907 for the construction of State highways, "small town" roads, and for reconstruction, repair and maintenance all put together.

Engineering Advice to Municipal Authorities.

As has already been stated, the most valuable work that the commission and its engineers are doing is that of educating the local authorities in charge of highways to do better work year by year. The requests for engineering advice are more numerous every year, and in all cases the commission sends an engineer to look over the ground. Where necessary, the commission furnishes plans and specifications for the work, advertises the contract, and arranges for the supervision of the work, the municipality merely paying the estimates as they become due.

Almost invariably the advice of the commission and its engineers is followed by the local authorities, resulting in better and more permanent construction of highways and bridges.

The commission furnished engineering advice to 48 cities and towns this year, and these municipalities expended over $360,000 of their own money for the improvement of highways and bridges.

Approval of Specifications.

By chapter 719 of the Acts of 1913, as amended in 1914, it is necessary that specifications for the construction of municipal ways be approved by the commission before the town or city can borrow money for the work. Under this act 11 cities and 14 towns presented specifications for approval. In each case

a study was made of the conditions as to materials, traffic, etc., and in some instances it was necessary to redraft the specifications to insure construction suitable for the needs.

Thus the commission during the year gave engineering advice or approved specifications for the construction of roads in 73 cities and towns.

Work done under Special Acts.

Williamstown to Pittsfield.

The Legislature in 1914 appropriated $10,000 for the construction or improvement of the road between Williamstown and Pittsfield. A survey was made, and a contract let for the improvement of a portion of the road in the town of Lanesborough. This work is progressing rapidly.

The commission and the Berkshire County commissioners allotted additional sums, amounting to $11,000, to be expended on this same route in the towns of Lanesborough, New Ashford and Williamstown, the town of Williamstown appropriating $8,000 additional towards the cost of the work. Most of this money has already been expended.

In Williamstown a local broken stone road was constructed. In the other two towns the work consists in widening the road, constructing the necessary foundation, culverts and ditches, and surfacing with the best available material.

New Marlborough.

By chapter 754 the Legislature in 1914 made $10,000 available for the construction or improvement of the road leading from the Connecticut line at Clayton to Southfield, a village in New Marlborough. This road is some 7 miles long, through a very sparsely settled section of the country.

A survey has been made from Clayton to Konkapot Mill, a distance of less than 2 miles, but the work could not be started this fall.

Egremont.

In 1914 $15,000 was appropriated for the construction or improvement of the road in the town of Egremont from the New York line, over Molasses Hill, to the village of South

Egremont, a distance of about 3 miles. A survey has been made and a contract awarded.

The State of New York has constructed a State highway from Hudson, N. Y., to the Massachusetts line, and in 1912 a short stretch of road in Egremont was graded to connect with this road, the cost of construction being borne by the town and the commission, the Berkshire County commissioners laying out the road and paying land damages.

It is apparent that a much better line and grade can be secured by relocating the road. The precise wording of chapter 733 makes it somewhat doubtful if the commission has authority to do anything except construct upon the location of the present road, and the contractor has been directed to begin work at the easterly end of the road, where the existing location will be followed. It is the intention of the commission to ask the Legislature to pass an act authorizing the construction of a portion of the road in a new location.

Becket to Hinsdale.

In 1914 $10,000 was appropriated for the construction or improvement of this road, and the commission and the town of Becket each made available $2,700 more, making a total of $15,400.

Work was begun where this road joins the State highway, over Jacob's Ladder, at Bonney Rigg Four Corners, and $9,000 will be expended on this section. The remainder of the money, $6,400, will be expended in improving two bad sections of road nearer the village of Becket.

A local stone macadam road is being constructed. Over a large portion of the way the subgrade is poor, and a stone foundation will be constructed. The work has been started, and will be completed in the spring.

Hinsdale to Chester.

This year $10,000 was appropriated by the Legislature for the construction or improvement of this road leading from Chester to Hinsdale through Middlefield. A like sum of money was made available in 1913, and was expended in the towns of Chester and Middlefield in widening, improving and

grading the existing road, and providing the drainage which was very necessary.

The work this year has been of the same character; a part of it has been done in the town of Chester and a part in the town of Middlefield, in continuation of last year's work. Nearly 4 miles of road have been so improved. This road is practically the only route by which Middlefield can be reached by vehicle.

Dalton to Goshen.

The Legislature this year appropriated $10,000 for use on this road, which forms a part of the main through route between Northampton and Pittsfield.

As stated on page 54 of the last annual report of the commission, over $78,000 had been expended on this route previous to 1914, this sum including special appropriations amounting to $30,000.

The special appropriation of $10,000, made in 1914, together with $10,000 allotted by the commission from the State highway fund, has been expended in Windsor, in the construction of a local stone macadam road, extending westerly from last year's work. This construction has been very expensive, because of the vast amount of ledge that required blasting, the extensive grading, and the stone foundation and side drains that were absolutely necessary for almost the whole distance. The road is completed to the top of Windsor Hill, where it joins the State highway previously laid out.

On this same route work has been continued in the towns of Goshen and Cummington, in drainage, widening and grading the road, and surfacing with gravel. Nearly $10,000 was allotted by the commission from the "small town" and motor vehicle fees funds.

This work also has been very expensive, as a great deal of ledge had to be removed in order to secure the necessary width, and the entire road required a stone foundation because of the wet and clayey subgrade.

There still remain some 12 miles of road on this route that should be widened and graded, and many more miles where the road should be surfaced in the near future with suitable material, as the traffic will certainly increase as soon as the road is improved.

Holden.

In 1914 $10,000 was appropriated by the Legislature for the construction of the road in Holden between Jefferson village and the State highway leading to Rutland. When the estimates were prepared, it appeared that the money available was sufficient to construct only about one-half of the road to be built. A special town meeting was recently called, and the town of Holden appropriated $1,500 towards the cost of completing the road, the commission allotting $8,500. The work is now in progress.

The commission has agreed to complete the gap which remains in the State highway leading to Worcester, where a grade crossing was recently abolished, and this work will be done next year.

The road is on the main route between Worcester and Athol via Holden and Rutland. When these gaps are built, there will be a continuous State highway from Worcester to Rutland.

Southbridge to Webster via Dudley.

The Legislature this year appropriated $10,000 for the construction or improvement of this road. What the parties interested desired was to have the road in the town of Dudley improved between the Connecticut line at Quinebaug and the Southbridge line.

A careful study was made of a suggested line along the river, but it was found that it would be very expensive to construct a road upon that line, and that when completed it would not be any great improvement over the existing route. It was therefore decided to follow the location of the existing road.

A contract has been made and the work commenced. The road will be built of gravel, but a stone foundation will be necessary for a portion of the way. Because of the character of the soil and the necessity for this foundation, not more than 7,000 feet of road can be constructed with the money available. This is only about one-third of the total distance from the Connecticut line to the Southbridge line.

Milford to Southborough via Hopkinton.

An appropriation of $10,000 was made by the Legislature this year for the construction or improvement of the road from Milford through Hopkinton to the highway in Southborough at Cordaville. The whole distance is about 7 miles.

Work on the road has been begun in Hopkinton at the Milford line, and a local stone macadam road will be built from that point northerly as far as the money available will permit, — probably from $1\frac{1}{4}$ to $1\frac{1}{2}$ miles. The work is now in progress, and will be completed early next spring.

Revere Traffic Road.

The Legislature in 1913 authorized the commission to make the layout of the Revere traffic road 80 feet in width, beginning at or near the Point of Pines station, and extending to Revere Street in the town of Revere, and provided that the $300,000 previously appropriated might be used for the completion of the work. The work done in 1913 was described in that year's report.

The location taken is wide enough to allow for future widening and improvement, and for sidewalks or street railway tracks, if required. Most of the land damages have been settled. A few cases are still in dispute, and the settlement is in charge of a counsel designated by the Attorney-General.

While the commission was authorized to build the road and pay the land damages out of the $300,000 above referred to, it believes that the road will be completed and damages paid within the appropriation.

The filling over the whole length of the road was allowed to remain unsurfaced during the winter and spring, to allow for settlement. The road is now practically completed, with a tar macadam surface 32 feet in width, and will be opened for travel this year.

A steel truss bridge, on concrete abutments, has been built over the location of the Boston & Maine and Revere Beach railroads. Before the abutments were started an experienced firm was employed to make borings, which showed a good foundation.

Last winter, after the abutments were built, slight settlements took place when the earth fill was put in at the approaches. The commission then consulted Joseph R. Worcester & Co. and Prof. George F. Swain, for the purpose of determining what should be done to improve the conditions before the truss was put on and the bridge floor completed. As the settlements seemed to be caused mostly by the weight of the earth filling on the approaches, it was recommended that the filling behind the abutments should be removed, the concrete floors on each end of the bridge extended and supported by small abutments and side walls parallel to the road, thereby greatly reducing the pressure. This course was followed, and since then there has been no perceptible settlement.

This road will not be really serviceable for through traffic until some connection is made between Revere Street and the State highway leading to East Boston.

Humphrey Street, Swampscott.

This is the main street in the village of Swampscott, connecting the metropolitan parkway in Lynn with Marblehead. It not only connects with the parkway, but with the main highway leading to Lynn.

The old road was extremely narrow and dangerous, and did not provide sufficient room for the traffic. There was a single car track in the road, and a double track was very much needed.

The Legislature in 1913 directed the town, the county and the State to co-operate in widening and constructing this highway. The Essex County commissioners were required to pay all land and grade damages, and were authorized to spend $100,000 for this purpose. The town was required to pay for the grading, sidewalks, and all other construction except the surface of the roadway, and was authorized to borrow $50,000 for the purpose; and the commission was required to surface the roadway, extending from a line 18 inches outside of the double-track location to the curb on each side, with creosoted wood block on a concrete base, or other suitable material.

The road has been laid out 70 feet in width. Most of the way it has a 9-foot granolithic sidewalk. For a part of the

way on the new street, a 2½ foot grass plot has been left between the sidewalk and the granite curb. The wood block extends from the street car tracks to the curb line, a strip 3 feet in width being paid for by the Bay State Street Railway Company. The railway company has constructed a double track, and paved with vitrified brick the entire space between the outer rails.

The gas and water pipes, electric light, telephone, telegraph, fire-alarm and the trolley feed wires were all placed underground while this work was in progress.

A dual system of gas and water pipes was put under the sidewalk, and all house connections were laid to the street line, so that it is hoped the surface of the street will remain undisturbed for many years.

The Legislature in 1914 authorized the commission to construct suitable approaches at each end of Humphrey Street, and to use for this purpose the unexpended balance of the original appropriation of $75,000.

The Essex County commissioners and the town of Swampscott were required by this act to pay for the work corresponding to that paid for by them in the original construction, the plans and specifications prepared by the commission requiring the approval of the county commissioners and the selectmen of the town.

The approach to the Lynn line was laid out about 61 feet in width, as only one sidewalk was required, there already being a granolithic sidewalk in the metropolitan parkway. The county commissioners made the layout and secured the necessary land. On this approach the commission adopted the same type of construction as was used in the original layout, to wit, a creosoted wood block on a concrete base between the granite curb and the track, and vitrified brick between the tracks.

On the approach on the Marblehead side, the street was narrow; and all parties interested agreed that it was much better and safer to use granite block on a concrete base, instead of wood block. This was the most complicated piece of work that the commission has ever undertaken, involving so many public service corporations, as well as the municipal

underground structures, and the moving of many buildings. The co-operation between the Essex County commissioners, the selectmen and other officials of the town of Swampscott, the officials of the Bay State Street Railway Company, the Lynn Gas and Electric Company and the commission in solving the many complicated problems which arose has been most cordial.

Considering the nature of the work, the number of trenches that had to be dug and allowance made for the filling to settle, every one concerned may be congratulated upon the efficient way in which the work was carried on, the traffic continually having the use of the street during construction, except for a slight detour, there being no parallel road.

The road is now practically completed from the Lynn line to Orient Street, and it is expected that the approach toward Marblehead will be completed by January 1.

Salisbury Beach Road.

By the provisions of chapter 659 of the Acts of 1914 the commission was authorized and directed to lay out within one year from the passage of the act the highway in the town of Salisbury, authorized by chapter 746 of the Acts of the year 1911, as amended by chapter 454 of the Acts of the year 1912, between the marshes and the beach at Salisbury Beach, from the New Hampshire line to Broadway, and to estimate and determine damages and betterments, the highway when laid out to be a public way in said town. This act was passed because the statute creating the Salisbury Beach Reservation Commission was held to be unconstitutional, and therefore the act of said commission in laying out this highway was null and void.

The layout was made on Oct. 14, 1914. The commission applied to the Attorney-General for the appointment of counsel to look up the land titles and make proper forms of release, etc., and he appointed Charles I. Pettingill of Amesbury, who has been engaged in that work.

The commission also had several conferences with Mr. J. Q. Evans, chairman of the Salisbury Beach Reservation Commission, who was thoroughly familiar with all the land, being

the active member of that Board when it made the former taking.

As soon as the titles are determined, the commission will ascertain as nearly as possible both the damages and the betterments, and make the necessary awards and decrees required by the act. The commission understands that the counsel will have ascertained within a short time the names of the owners of all lots of land which have been either damaged or improved.

Massachusetts Roads, 1893 to 1914.

It is extremely difficult to secure even approximately correct statistics as to either the actual mileage of roads in the State, or the amount of money that is spent upon them. In 1893 the commission collected and published the most accurate statistics it could secure, showing the mileage of roads, width, character of material, etc. The statistics were collected from the authorities in charge of the roads in the various cities and towns, and also the road mileage was checked up from the best obtainable maps. There were a number of municipalities that did not answer, and the statistics had to be collected from the best information obtainable.

It appeared that at that time there were 20,000 miles of streets and roads in the Commonwealth outside of the city of Boston, and nearly 18,000 miles of these roads were in the towns. The commission estimated at that time that 1,500 miles of these roads were upon primary routes; and that if $500,000 was spent each year on their construction, it would require from fifteen to twenty years to build them.

The tables showed that there were 5,548 miles of gravel road, 469 miles of macadam, 49 miles of granite block, 26 miles of cobblestone pavement, 6 miles of concrete, $\frac{3}{4}$ of a mile of asphalt, 1,643 square yards of brick, and 10 miles of shell road in 1891 or 1892. Thirty and one-half per cent. of all the roads were either paved, macadamized or gravel; the remaining 69$\frac{1}{2}$ per cent. were dirt roads.

The average amount spent by the towns for highways for the years 1890, 1891 and 1892 was $1,136,944, and of this amount $314,324 was spent by the towns in 1891 for con-

structing gravel or macadam roads, which were practically the only improvements of a permanent nature which were made.

The commission stated that experience showed that with a well-constructed macadam highway repairs and resurfacing would be required at intervals of from eight to twenty years, as determined by the amount of travel over the way.

Massachusetts Roads, 1913 and 1914.

The commission has been trying for the last two years to secure the best information that it could in regard to the highways in the Commonwealth. It sent out circulars to all the officials in charge of the roads in the various cities and towns in 1913, and again in 1914, and the information obtained will be published in the tables in the Appendix. Replies were finally secured from all the 33 cities, and from all but one of the 320 towns.

Naturally, the information contained is not exactly accurate, because very few of the towns have measured their roads, and because what one official in one town classifies as an unimproved road, another official in another town would call improved.

The commission tried to secure as uniform a classification as possible between the improved and the unimproved roads, by defining the improved road as one that had been graded and drained and when the necessary culverts and ditches had been constructed. The roads were then classified according to the materials used upon the surface, as dirt, gravel, plain macadam, bituminous macadam, macadam with oil or tar coat, and pavement. This classification was used because it is practically the same as that used by most of the other States, and is contained in the road statistics published by the government.

In most of the publications showing the mileage of improved and unimproved roads, published in former years, Massachusetts has not been given credit for nearly the actual number of improved roads that she really has according to the standard that is used in most of the States. According to the reports sent in for 1913 and 1914, the total mileage of

streets and roads in the Commonwealth was nearly 23,031; of these, 4,348 miles were in the 35 cities, and 18,683 miles were in the 318 towns.

In 1893 the report showed that there were 20,000 miles of streets and roads outside of the city of Boston; in 1914 there were 22,461 miles, an increase of 2,461 miles. In 1914 the reports showed that 18,773 miles of these streets and roads were improved, and only 4,258 were unimproved (on the above definition); over 81 per cent. were improved, and less than 19 per cent. were unimproved. In 1893 the commission stated that 30½ per cent. of the 20,000 miles of road were improved, and 69½ per cent. were unimproved.

In 1914, according to the reports, there were: —

	Miles.
Dirt roads,	11,068
Gravel roads,	7,729
Plain macadam,	2,016
Macadam with oil or tar coat,	1.320
Bituminous macadam,	449
Pavements,	450

Included in the mileage of gravel roads were 14 miles of shell road, 18 miles of sand and oil or sand and clay road, and 4 miles of cinder road.

Nearly 50 per cent. of the Massachusetts roads are still dirt roads, but on 6,810 miles these roads have been graded and drained, and the ditches and culverts have been made; 4,258 miles remain practically unimproved.

Broadly speaking, the total mileage of unimproved road is in the 200 smaller and poorer towns, with a valuation of under $2,000,000 each. Unfortunately, the unimproved road is often their main road to and from the village, to the railroad station, or to the next town.

In most of these reports the State highways were included in the mileage as improved roads, but quite often they were not included in the mileage of improved road surfaces; consequently, quite a number of miles should be added to the mileage given for improved road surfaces.

Yearly Expenditures for Streets and Roads.

The reports show that over $9,964,727 was spent in one year by the cities and towns for all road purposes. Of this amount, $6,693,207 was spent in the 33 cities, and $3,271,520 in the 320 towns. In 1893 the commission stated that $1,136,-944 a year was the average expenditure by the towns for road purposes.

These expenditures do not include the $1,060,365 that the commission spent for the construction of State highways and "small town" roads, nor the $886,239 that was spent for re-surfacing, oiling, tarring and maintaining the State highways, nor the $167,614 that the commission spent from the motor vehicle fees in constructing, improving and maintaining many miles of road in the towns on the through routes, nor the $261,541 that was spent on constructing particular roads for which special appropriations were made by the Legislature and which the commission was directed to construct or improve. This total expenditure of $2,375,761 should be added to the $9,964,727, making the total expenditures in Massachusetts for road purposes for one year $12,340,488.

Guide Posts.

The commission has recommended for 1915 an appropriation of $5,000, to be used for the purpose of marking the main through routes.

In several of the adjoining States certain of the main routes have been marked by colors, a band of some particular color being painted upon guard rail or telegraph or telephone posts. This makes the route very easy to follow, but, unfortunately, there has been no uniformity in the colors used. Each State has used whatever color seemed best, with the result that the same route may be designated by different colors in the different States.

The commission has consulted with the highway authorities in the States of New York, Connecticut, Rhode Island, Maine and New Hampshire, and it has been agreed that, if some simple scheme can be devised for a uniform marking of the main routes, all the States will adopt the same color or emblem

for the same route. It has been suggested that one color shall be used on all north and south routes, and another color for east and west, etc., with suitable marks at intersections and for secondary routes. If the appropriation is made, it seems probable that some such uniform scheme will be adopted.

Guide Boards.

A statute was passed in 1794 directing the municipalities to erect and maintain guide posts at such forks or intersection of ways as lead to adjoining towns, and this statute is still on the statute books. Guide boards have now been erected on most of the important corners on the through routes, but a good many, even on important routes, still remain without signs.

One great difficulty in the past has been that the signs that have been erected at considerable expense were not permanent, and disappeared, or were destroyed, in a few years and were not replaced. Most of the guide boards erected up to the present time have consisted of wooden signs and wooden posts, with the result that the paint on the sign board disappears in a few years, and the post itself lasts only from eight to twelve years.

Some guide post of a more permanent nature is necessary, — one that will last for a reasonable number of years. If this can be secured at a reasonable cost, no doubt many of the cities and towns would erect new posts, to replace the present wooden signs and posts.

In France every road corner in the country has such a guide board. The posts are made of cast iron and painted, and the sign boards are made of cast iron with raised lettering and also painted. The sign board has on it the name of the next town or hamlet, the name of the most important town in that particular district beyond the nearest town, and, on important roads, it has also the name of the principal city at the end of the route, with the distances to each place. These sign boards have to be painted every two or three years.

In most of the counties in England there are conspicuous guide boards at the corners on the main routes. These also have cast-iron posts and signs, often with raised lettering on each side of the sign board.

The commission has obtained photographs of several of these guide posts and signs, and detailed drawings of the French and some of the English guide boards, and, if the appropriation is made, it expects to have a pattern made and have a few sample posts and sign boards cast at some foundry and erected at a few important corners, to serve at least as an example for the cities and towns to follow.

In some of the towns of the Commonwealth where granite is inexpensive, granite posts have been erected, and the direction signs have been painted on the post with black letters on a white ground. This makes a very serviceable guide board, if only the lettering is renewed from time to time. In most places, however, granite posts would probably be much more expensive than cast iron or some other permanent guide board. It would cost a vast amount of money to erect and maintain such permanent signs at all corners, because any permanent guide post and sign will be quite expensive, and there are a great many thousand corners in the Commonwealth; but the commission believes it would be well to start with a few signs, and see if the movement will not spread.

The English county signs in one county cost from $22 to $28 each, the cost depending on the number of signs on each post, the amount of lettering, etc.; the transportation, erection and painting had to be paid for in addition. It seems to the commission that the experiment is well worth trying on a small scale.

Automobile Department.

Fees.

During the year 1914, 77,246 automobiles and 8,161 motor cycles were registered, an increase of over 23 per cent. in the number of automobiles and over 14 per cent. in the number of motor cycles registered in 1913. In addition to the foregoing there were 1,518 manufacturers' and dealers' registration certificates issued, including 28 motor cycle dealers.

The amount of fees collected for automobiles was $754,059, or an average of $9.77 for each automobile, the average fee collected in 1913 being $9.83.

For the 1,518 manufacturers' and dealers' registrations, $37,280 was collected. The fees collected for the registration

of motor cycles amounted to $15,572, and the fees collected for operators' licenses, examinations and sundries amounted to $119,053.75.

During the year, 21,257 operators' licenses were issued, and 51,090 operators' licenses were renewed. The number of chauffeurs' licenses issued was 5,601, and the number of chauffeurs' renewals issued was 21,584. There are therefore 99,532 persons licensed to operate automobiles in this State. In 1914 the number of licenses issued was 22 per cent. in excess of those issued in 1913, while the number of automobiles registered increased 23 per cent.

The total amount collected from registration fees, license fees, sundry receipts, interest, etc., was $925,964.75, an increase of 21 per cent. over the amount collected in 1913. From this amount had to be paid the cost of number plates, salaries of clerks, investigators, examiners, etc., in the automobile department, as well as many other expenses, rebates, etc.

Eighty per cent. of the balance of the money is by law available for the maintenance and repair of State highways, and 20 per cent. is available for the repair, improvement and construction of roads on through routes in towns, under the provisions of chapter 525 of the Acts of 1910.

For further details relating to registrations, licenses, fees, etc., see Appendix B.

Examinations for Licenses.

The examiners of the commission held 7,559 examinations during the fiscal year of 1914. This was an increase of 304 over the preceding year.

Of the 5,659 persons examined, 4,935 finally succeeded in passing the examinations and 724 failed; while in 1913, 5,847 persons were examined, 671 of whom failed to pass. Almost all of the failures were on the road test. The fact that 724 of the persons examined could not pass the examination on the road test shows the unfitness of the applicants. The examination is entirely fair and practical, and the road test required is not unduly severe. It consists merely of operating the car under ordinary traffic conditions.

Automobile Accidents and Investigations.

The following table shows the accidents resulting in personal injuries, in which automobiles have been involved, and of which the commission had notice, for the fiscal years of 1913 and 1914: —

	1913.	1914.
Total number killed,	188	229
Total number injured,	2,923	4,010
Total number accidents,	3,101	4,239

About 75 per cent. of these accidents occurred in the daytime, and 25 per cent. after dark. Three times as many people were killed and injured in city streets as on the country roads. There were 41 more fatal accidents in 1914 than in 1913, an increase of nearly 22 per cent., while during the same period the number of automobiles registered increased 23 per cent.

In compiling the above, the commission has included only the accidents in which some person was killed or injured.

Chapter 530 of the year 1913 requires the operators of all cars involved in accidents, resulting in the injury of persons or property, to report the same to the commission. Over 8,200 such reports were received this year. Most of the accidents reported are of a trivial nature, and many accidents were reported both by the operators and other persons, causing a duplication of reports. It seemed best, therefore, to include in the list only the accidents of a serious nature, so that some fair comparison can be made with other years and with accidents from other causes.

While this year the number of automobiles increased 23 per cent., and the number of persons fatally injured in automobile accidents increased 22 per cent., the total number of persons injured increased about 33 per cent. This may be accounted for by the fact that in 1914 all accidents occurring during the entire year, many of which were trivial, were reported, whereas formerly the commission had no notice of such accidents.

It certainly is deplorable that so many accidents occur, but it must be borne in mind that some accidents are unavoidable, no matter how careful the operators of motor cars may be.

The commission is certainly doing and will do all in its power to remove the drunken, reckless or careless operator from the road. In accident cases it often happens, however, that the pedestrian, the bicycle rider or the driver of a carriage is careless or reckless and to blame, rather than the operator of the motor car.

Street Railway Accidents.

In considering whether automobiles are unduly dangerous to the traveling public, accidents caused by other vehicles should be considered. Unfortunately, the accidents from teams are not reported, except in a few cities. Street railway accidents are, however, in the report of the Public Service Commission, and the following statement shows the relative number of accidents in which street railway cars and motor vehicles were involved, the street railway figures being for the year ending June 30, 1914: —

	Street Cars.	Automobiles.
Total number killed,	117	229
Total number injured,	8,282	4,010
Total number killed or injured,	8,399	4,239
Occupants of cars or employees killed,	41	56
Other persons killed,	76	173
Occupants of cars or employees injured,	6,867	879
Other persons injured,	1,415	3,131

In this connection it should be remembered that the street railway cars run upon tracks and often upon locations which are for their exclusive use. Notwithstanding that, nearly twice as many people were killed and injured in street railway accidents as in accidents where automobiles were involved.

A fairer comparison would be by the mileage covered by each class of transportation. Such a comparison can be made only by estimating the mileage traveled by automobiles. Any computation made on assuming an ordinary mileage for automobiles and taking the actual mileage of the street railways will show that the motor vehicle runs several times as many miles as the street car does before it either kills or injures anyone.

There are about 10,000 street railway cars operated in the State, and they average about 13,000 miles a year each. There

are over 84,000 automobiles and trucks licensed in this State, and at least 20,000 more coming from other States are operated over our highways every year.

Including the occupants of the cars, there were 8,399 persons killed or injured in street railway accidents, and only 4,239 killed or injured in automobile accidents.

Considering only accidents to persons who were not passengers, 10,000 electric cars killed or injured 1,491 persons, and about 100,000 automobiles and trucks killed or injured 3,304.

If each motor vehicle were operated 5,000 miles a year, it traveled on the average over 110,000 miles before any person was either killed or injured.

Some person was either killed or injured for every 16,000 miles that a street railway car was operated.

Accidents in the Streets of Boston.

In connection with the accidents reported, it is interesting to note what has occurred in Boston, as the results there are a fair criterion for the rest of the State.

The number of automobiles registered increased 23 per cent. since 1913. The number registered in the four months from December to March, inclusive, increased from about 34,000 in 1913 to about 41,749 in 1914.

The police commissioner of the city of Boston publishes in his report the record made by that department of the accidents which occur in the streets of Boston. As this record is practically complete and certainly impartial, it is of interest, in connection with the automobile accidents, to consider other accidents as well, and the relative traffic.

There were in the streets of Boston during the last tabulated year a total of 93 persons killed and 2,679 injured as a result of various accidents; 64 of the deaths and 1,628 of the injuries were due to traffic of various kinds; 29 deaths and 1,051 injuries were due to other causes, the largest number of which (23 deaths and 932 injuries) being due to falls on the sidewalk, from buildings, etc.

The following are the deaths and injuries caused by accidents due to traffic: —

	1913.		1914.	
	Deaths.	Injuries.	Deaths.	Injuries.
Teams, bicycles, etc.,	15	513	19	522
Street cars,	9	464	16	447
Automobiles,	22	495	28	649
Motor cycles,	–	–	1	10

Automobiles were therefore responsible for causing more deaths and injuries than either teams or street cars alone, but caused 7 less deaths and 320 less injuries than were caused by the electric cars and the teams.

A much larger number of automobiles is now operated in the four winter months than four years ago, and this fact and the increased traffic, caused by the constantly increasing number of automobiles and motor trucks, largely account for the increase in accidents due to motor vehicles.

Two years ago, in 1912, there were 50 persons killed and 1,616 injured by accidents due to traffic in the streets of Boston; in 1914 there were 64 persons killed and 1,628 injured in the same kind of accidents. Meantime the number of motor vehicles registered has increased, in round numbers, from 54,000 in 1912 to 84,000 in 1914. Apparently the number of vehicles using the streets is increasing in a greater ratio than the accidents.

Court Abstracts.

During the year 1914, 5,491 abstracts of court records were received from the courts, as against 5,107 in 1913. These came from 94 courts of the Commonwealth.

The abstracts show that 4,951 persons were convicted of violations of the automobile law; 212 were found not guilty, 492 cases were appealed, 1,148 complaints were placed on file, and 226 were nol prossed. In 20 cases the defendants were defaulted, and in 31 they were committed to imprisonment. The complaints were as follows: —

For manslaughter,	10
For overspeeding,	2,039
For reckless operating,	143
For operating while intoxicated,	198
For using automobile without authority,	72
For endangering the lives and safety of the public,	72

For failing to stop after causing injury,	54
For improper display or no register number,	103
For operating without a license,	377
For operating without carrying registration certificates,	126
For operating an unregistered motor vehicle,	94
For refusing to stop when signaled by officer,	121
For operating with unlighted lamps,	251
For violations of park rules,	133
For failing to give signal when approaching intersecting way,	1,177
For miscellaneous offences,	727

The abstracts show that $33,654 was imposed as fines, $1,010 for violations of the metropolitan park rules, and $1,616.94 for costs of court. All of this amount was not necessarily collected, as many cases were appealed.

For further details see Appendix B.

Special Regulations.

The commission's reports for the years 1912 and 1913 contain synopses of the special regulations in effect throughout the State. No special regulations were approved by the commission in 1914.

Automobile Hearings.

These hearings are held either upon complaints or as a result of investigations made by the commission's investigators, or at the request of the operators whose licenses have been suspended or revoked. Such hearings have occupied the entire day on Wednesday of each week, and often other days in the week as well. During the past year, the commission held 308 such public hearings, the same number as in 1913.

In addition to these hearings the commission receives every week a large number of reports of investigations made by its investigators. These are read and acted upon by the commission. There were 1,226 such reports made in 1914, as against 862 in 1913.

In 1914 the commission's investigators prosecuted 77 operators in the courts.

During the year, 23 operators or chauffeurs were placed on probation by the Board, and were required to report regularly for a certain period, at intervals of a month or so, to some

particular officer. Of the persons so placed on probation, 18 reported regularly, and 5 had their licenses taken away for failure to keep the terms of their probation.

Examination of Garage Records.

During the year, inspections were made of 440 garages and dealers' places of business, to ascertain if they were complying with the law. Where violations of the law were reported by the inspectors, cautionary letters were written if the neglect appeared to be accidental; in the more serious cases some were prosecuted in court; and in some instances, the proprietors were summoned before the commission to show cause why their licenses to operate or their registration certificates should not be suspended or revoked.

Suspension and Revocation of Licenses.

The following summary shows the action taken by the commission in the various cases in 1913 and 1914, and the causes of said action: —

Action taken on Formal Complaints after Hearing.

	1913.	1914.
Licenses revoked,	17	1
Licenses suspended,	35	26
Registration certificate suspended,	1	1
Complaints placed on file,	11	11
Complaints dismissed,	7	9
Operators cautioned,	12	16
Total hearings on formal complaints,	83	64

Suspensions and Revocations.

	1913.	1914.
Licenses revoked,	198	231
Licenses suspended,	365	521
Rights to operate in Massachusetts suspended,	–	34
Registration certificates suspended or revoked,	2	2
Registration certificates canceled,	2	1
Dealer's registration certificates suspended,	5	4
Motor cycle registration certificates revoked,	19	19
Motor cycle registration certificates suspended,	17	42
Dealers' registration certificates suspended,	–	–
Dealers' registration certificates revoked,	–	4
Total suspensions and revocations,	608	858

	1913.	1914.
Suspensions and revocations resulting from court convictions,	247	294
Suspensions and revocations after hearings on formal complaints,	52	28
Suspensions and revocations after investigation, on which hearings were given in some cases,	309	536
	608	858

Causes of Suspensions and Revocations.

	1913.	1914.
Reckless operation,	120	142
Operating while under influence of intoxicating liquor,	87	131
Refusing or neglecting to stop after accident,	20	22
Accidents resulting in death,	187	223
Improper operation,	101	155
Three overspeeding convictions,	4	1
Operating auto without owner's permission,	14	21
Improper person,	35	80
Other offences,	40	83
	608	858

Deaths.

In 1914 there were 219 accidents in Massachusetts in which motor vehicles were involved, causing 229 deaths. There were 9 accidents in other States in which Massachusetts operators were involved, causing 12 deaths. Three of these deaths occurred in New Hampshire, 3 in Vermont, 1 in Maine, 2 in Rhode Island, and 3 in New York. These accidents were investigated because Massachusetts operators were involved.

Of the 229 deaths which occurred in Massachusetts, 3 were the result of falling from motor vehicles, 1 from asphyxiation from gas fumes, 5 from natural causes, 1 from tetanus, 1 from pneumonia, 1 from the explosion of gasoline, and 1 crushed when the body of the truck on which he was working fell. One of the 3 occurring in New York resulted from tetanus. These last 14 deaths should not properly be attributed to motor vehicle accidents, as the motor vehicle was only indirectly involved. The fatal accidents were disposed of as follows, the figures for 1913 being also given: —

	1913.	1914.
Licenses revoked,	29	39
Motor cycle registration certificates revoked,	2	1
Licenses suspended, and reinstated after investigation and hearing,	102	95
Motor cycle registration certificates suspended, and reinstated after investigation and hearing,	2	9
Licenses suspended, final hearings pending,	19	24
Motor cycle registration certificates suspended, final hearings pending,	0	2
Rights to operate in Massachusetts suspended,	6	6
Rights to operate in Massachusetts suspended, and reinstated,	0	3
No action, because operator had no Massachusetts license or registration certificate,	9	3
No action, because operator was unknown,	1	0
No action, because of death of operator,	22	43
	192	225

The number of deaths in 1914 increased 22 per cent. over those in 1913, and in the same period the number of automobiles increased 23 per cent.

Suggestions for Legislation.

Special Road Work.

During the last few years there have been a number of special acts appropriating money for the construction and improvement of various existing roads and for the construction of new roads. In most instances where the appropriation is made for country roads in the smaller towns, the money appropriated at any one time is sufficient to construct only a small portion of the road described in the statute. Quite often a much better location and better grade can be secured by having the road relocated, or by making a new layout over a part or the whole of the distance. Such a new location might not only improve the alignment and grade, but be less expensive than the old location, so far as construction is concerned, furnishing, also, a much better route for the public.

As a doubt has arisen (under the particular wording of certain acts making appropriations for the improvement or construction of specific roads) as to whether the highway com-

missioners, or the county commissioners of the county, or the selectmen of the towns in which such roads are located, have authority to change the location or relocate roads described in these special acts, the commission recommends that a statute be passed conferring upon it the necessary authority to make such improvement, and also authorizing it to spend the money on parts or the whole of such roads as it deems best under the circumstances.

Advice to State Officials about Road Construction.

Often the trustees or superintendents of State institutions, or some other State official, request the commission to give them engineering advice about the construction, etc., of some particular road or bridge under their jurisdiction.

The present law requires the commission to furnish such advice to the "officers of counties, cities or towns having charge of and authority over public ways," and the commission believes that it should be authorized to furnish the same advice to other State officials who have charge of or authority over the construction or maintenance of any roads or bridges, whether on public or private ways. It recommends the amendment of the present law to that extent.

Motor Vehicle Legislation.

Definition of "Chauffeur."

On the whole, the motor vehicle laws in this State are excellent, and have been adopted in many other States. From time to time certain omissions or inequalities are called to the commission's attention, and at the present time certain corrections should be made which, while not extremely important, will serve to make the law clearer and to remedy defects that have been found.

One change suggested by the commission relates to the definition of chauffeur. The Supreme Court recently decided that an owner who lets and operates a car owned by him must have a special license from the commission, or that otherwise he operates illegally. The term "chauffeur," as at present defined, includes any person who operates a car "other than his own;" consequently, the ordinary interpretation of the law has been

that an owner might let and operate his car if he held an operator's license. This the Supreme Court has said he cannot do legally, because he is operating for hire. The law should be amended and made clear.

Definition of "Dealer."

The commission believes that the definition of "dealer" should be made clear, and that it should be limited to persons actually engaged in the business of buying, selling, renting or exchanging motor vehicles.

Under the present law it is not unusual for a person who is not really a dealer to take out a dealer's registration and secure five sets of number plates, and then let other people use them for a consideration; nor for several people to combine and call themselves a partnership, and take out a dealer's registration in order to obtain number plates at a low cost, and so avoid paying the fees required by law. The same sort of thing has been done by persons who claim to let two or more cars, when in reality they use the cars for their own purposes, though occasionally they may rent them for short periods of time; incidentally they also secure five sets of number plates which they often permit to be used improperly by other persons.

The commission believes that this practice should be stopped, and that the dealers' registrations should be issued only to persons actually engaged in the business.

Motor Cycle Seals and Chauffeurs' Badges.

As the law relating to the display of seals on motor cycles has been repealed, and a new law enacted requiring the display of number plates on such vehicles, certain changes are required in the present law relating to the furnishing of markers for motor cycles and the fees to be paid therefor.

The provision in the present law relating to chauffeurs' badges should be stricken out, as the badges have not been required by law for several years.

Suspension of Right of Unlicensed Persons to operate.

The commission already has the power, for sufficient cause, to suspend the right of any nonresident to operate in this State until he secures a license. It should have the same

power, for sufficient cause, to suspend the right of any resident of this State to operate.

Under the existing law, whenever any unlicensed person has an accident from reckless operation or while intoxicated, or is convicted in court of operating recklessly or so as to endanger the public, or while under the influence of liquor, or of going away without stopping after having injured some person, or of taking a car without authority, all the commission can do is to put his name upon the blacklist, so that he cannot secure a license without authority from the commission. In the meantime, he is permitted to operate an automobile when accompanied by a licensed person. This should not be permitted.

The law expressly provides that a person who has been licensed and whose license has been suspended or revoked cannot do this, and certainly a person who does not hold a license, but who has been guilty of reckless or improper operation, or of any more serious offence, should not be permitted by law to continue to operate motor vehicles.

Licensing of Motor Cycle Operators.

The use of motor cycles is constantly increasing, and it is a matter of universal knowledge that they are often operated recklessly and at excessive speed upon the highways. The display of number plates will undoubtedly tend to make the operators somewhat more careful, but the commission believes that further measures should be taken to remove the reckless operator from our highways.

From the reports received by the commission, it appears that there were 475 accidents this year in which motor cycles were involved. In these accidents, 28 people (10 pedestrians and 18 operators) were killed, and 447 were injured. Of the 447 who were injured in motor cycle accidents, 84 were pedestrians, 337 were the operators of the motor cycles involved, and 26 were occupants of automobiles or carriages, or bicycle riders.

There are altogether too many accidents; and the commission believes that much could be done to diminish the number if every motor cycle operator were required to have a license which could be suspended or revoked for the same reasons

and under the same circumstances that like action is taken when operators of all other motor vehicles are found to operate recklessly under the influence of liquor, etc.

There were about 8,000 motor cycles registered this year, and over 80,000 other motor vehicles, and in proportion to the number registered more persons were killed and injured by motor cycles than by other motor vehicles. One person was killed or injured for each 17 motor cycles registered, and one person was killed or injured for each 21 automobiles or trucks registered. It would seem that the motor cycle, occupying relatively so much less width upon the road, should cause fewer accidents.

The commission recommends, therefore, that every motor cycle operator be required to secure a license to operate, and that the commission be authorized to suspend or revoke that license or the registration certificate for the same causes and under the same circumstances that it is already authorized to take such action in the case of operators or chauffeurs of all other motor vehicles.

Licensing of Operators of Motor Ambulances, etc.

Under the definition of "motor vehicle," ambulances, fire engines, police patrol wagons, etc., are excluded. Questions have often arisen as to whether or not persons operating such vehicles should be licensed, and the commission recommends that legislation be enacted which will require the licensing of such persons. This will be in the interest of the public safety, because many of the vehicles in question are and have to be operated at high speeds in city streets, and therefore their operators should be required to hold licenses which could be suspended or revoked for the same causes that all other chauffeurs' and operators' licenses are suspended or revoked.

Penalties for Violation of Motor Cycle Law.

Under chapter 420 of the Acts of 1914, motor cycles, with or without side car attachments, are required to display number plates. As this statute was passed without incorporating it as an amendment of the regular motor vehicle law, it is

doubtful if any penalty is provided in case any person violates the provisions of the law.

The operators of motor cycles should be subject to the same penalties that all other operators of motor vehicles incur when they fail to comply with the law, and the fines and penalties should be uniform for like offences.

The commission therefore recommends that a statute be passed to provide for such uniform penalties.

Motor Cycle Brakes.

A committee of the Motor Cycle Manufacturers' Association, representing all the manufacturers of motor cycles in the United States, has called attention to the law requiring brakes on motor cycles. The committee states that the present law requiring a brake on a motor cycle which may be operated by hand, and a ratchet brake that can be set, is not complied with by most of the motor cycle manufacturers, because they have found a brake operated by foot to be made much safer and more effective, also because there are so many different operations, such as steering, operating the motor, blowing the horn, etc., which have to be done by hand. The ratchet brake provision also is not and cannot very well be complied with because a stand is substituted which prevents the motor cycle from moving when it is not being operated, and there is no practical way of attaching a ratchet brake. The committee thinks that this particular form of brake was intended to be used only on automobiles, as it might be dangerous if used on motor cycles.

The commission is of the opinion that the changes in the law recommended by the above committee, to wit, that the brake on a motor cycle shall not be required to be operated by hand and that a ratchet brake shall not be required, are reasonable, and will conserve the safety of the motor cycle operators and of the public as well, and it therefore recommends that the law be amended accordingly.

Expenditures.

The following is a summary of the expenditures of the Massachusetts Highway Commission from Dec. 1, 1913, to Nov. 30, 1914: —

Construction Expenditures.

TOWN OR CITY.	Amount.	Totals.
Barnstable County.		
Barnstable,	$378 09	
Bourne,	37,587 10	
Brewster,	40 30	
Chatham,	19 98	
Dennis,	34 14	
Harwich,	19 80	
Mashpee,	10,131 79	
Orleans,	1 50	
Sandwich,	3,670 86	
Truro,	1,079 50	
Yarmouth,	32 51	
		$52,995 57
Berkshire County.		
Becket,	$12,286 43	
Cheshire,	28,987 88	
Clarksburg,	1,572 44	
Florida,	120,821 34	
Great Barrington,	100 00	
Hancock,	5 30	
Lanesborough,	314 70	
Lee,	42,207 30	
Lenox,	11 34	
North Adams,	19,710 70	
Pittsfield,	9,562 26	
Savoy,	5,814 30	
Sheffield,	12,721 81	
Windsor,	15,164 32	
		269,280 12
Bristol County.		
Berkley,	$5,004 07	
Dartmouth,	671 49	
Dighton,	13,390 46	
Raynham,	11,228 93	
Seekonk,	1,110 66	
Somerset,	902 52	
Swansea,	532 52	
Taunton,	19,861 19	
Westport,	671 61	
		53,373 45
Amount carried forward,		$375,649 14

CONSTRUCTION EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amount brought forward, . . .	. . .	$375,649 14
Dukes County.		
Chilmark,	$7,554 15	
Gay Head,	5,702 62	
West Tisbury,	340 82	
		$13,597 59
Essex County.		
Beverly,	$995 89	
Essex,	2,577 12	
Ipswich,	34 95	
Middleton,	26,429 63	
Newbury,	279 99	
North Andover,	28,971 26	
Rockport,	98 24	
Rowley,	415 93	
Salem,	24,233 43	
Salisbury,	24,501 08	
Saugus,	11,565 08	
		120,102 60
Franklin County.		
Charlemont,	$15,773 33	
Colrain,	5 20	
Erving,	31,012 65	
Gill,	3 68	
Northfield,	49 65	
Orange,	22 37	
Shelburne,	10 40	
Sunderland,	15,558 32	
Whately,	685 98	
		63,121 58
Hampden County.		
Holyoke,	$45 63	
Palmer,	3 35	
Russell,	8,518 94	
Wilbraham,	3 20	
		8,571 12
Hampshire County.		
Belchertown,	$9,245 89	
Easthampton,	2,241 51	
Granby,	8,385 65	
Northampton,	1,775 52	
		21,648 57
Amount carried forward, . . .	. . .	$602,690 60

CONSTRUCTION EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amount brought forward,		$602,690 60
Middlesex County.		
Acton,	$3,517 97	
Ayer,	16,346 96	
Burlington,	1,143 38	
Concord,	3,795 87	
Groton,	357 99	
Holliston,	726 92	
Littleton,	1,547 14	
Marlborough,	3,366 01	
Pepperell,	5,416 03	
Shirley,	23,871 51	
Somerville,	2,070 32	
Sudbury,	696 93	
Tyngsborough,	5,665 91	
Wilmington,	95 47	
Winchester,	846 45	
Woburn,	1,313 62	
		70,778 48
Norfolk County.		
Avon,	$1,254 71	
Cohasset,	16 95	
Dedham,	29,330 29	
Norwood,	7 23	
Stoughton,	8,224 93	
Walpole,	844 32	
Westwood,	7 23	
Wrentham,	5,941 80	
		45,627 46
Plymouth County.		
Abington,	$1,092 62	
Brockton,	8,833 00	
Duxbury,	712 11	
Hingham,	100 15	
Lakeville,	39 90	
Marion,	7,299 74	
Marshfield,	17 00	
Plymouth,	17,904 32	
Scituate,	46 64	
Wareham,	9,715 25	
West Bridgewater,	54 20	
Whitman,	17,204 48	
		63,019 41
Amount carried forward,		$782,115 95

CONSTRUCTION EXPENDITURES — *Concluded.*

TOWN OR CITY.	Amount.	Totals.
Amount brought forward, . . .	. . .	$782,115 95
Suffolk County.		
Revere, ...	$4,314 23	4,314 23
Worcester County.		
Athol, ...	$6 72	
Blackstone, ...	31,276 51	
Brookfield, ...	63 38	
Charlton, ...	14,656 39	
Grafton, ...	19,581 86	
Lunenburg, ...	8,451 77	
Northborough, ...	622 31	
Northbridge, ...	15,442 81	
Oxford, ...	9,468 96	
Sterling, ...	46,569 33	
Uxbridge, ...	6,842 61	
West Boylston, ...	3,354 32	
West Brookfield, ...	2,908 85	159,245 82
		$945,676 00

EXPENDITURES UNDER "SMALL TOWN" ACTS.

[Chapter 47, Revised Laws, and Chapter 279, Acts of 1908.]

TOWN OR CITY.	Amount.	Totals.
Barnstable County.		
Eastham,	$1,000 00	
		$1,000 00
Berkshire County.		
Alford,	$600 00	
Becket,	1,106 42	
Cheshire,	115 04	
Egremont,	1,500 00	
Florida,	1,612 05	
Hancock,	122 80	
Lanesborough,	1,548 84	
Monterey,	805 80	
Mount Washington,	237 47	
New Marlborough,	526 20	
Otis,	704 88	
Peru,	2,794 41	
Richmond,	75 76	
Sandisfield,	873 80	
Savoy,	2,122 08	
Tyringham,	87 72	
Washington,	413 44	
West Stockbridge,	1,000 00	
		16,246 71
Bristol County.		
Berkley,	$1,470 00	
Freetown,	2,320 00	
Rehoboth,	993 15	
		4,783 15
Essex County.		
Essex,	$1,000 00	
Lynnfield,	1,500 00	
Rockport,	1,000 00	
West Newbury,	1,000 00	
		4,500 00
Franklin County.		
Ashfield,	$605 90	
Buckland,	800 00	
Charlemont,	1,304 96	
Colrain,	1,369 30	
Conway,	1,100 00	
Heath,	430 30	
Amounts carried forward,	$5,610 46	$26,529 86

EXPENDITURES UNDER "SMALL TOWN" ACTS — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$5,610 46	$26,529 86
Leverett,	1,650 00	
Leyden,	900 00	
Monroe,	100 00	
Orange,	500 00	
Rowe,	475 00	
Wendell,	1,300 00	
Whately,	2,600 00	
		13,135 46
Hampden County.		
Blandford,	$10,000 00	
Brimfield,	1,333 33	
Chester,	33 60	
East Longmeadow,	3,119 95	
Granville,	424 68	
Hampden,	539 64	
Holland,	300 00	
Monson,	1,500 00	
Montgomery,	393 00	
Russell,	653 20	
Southwick,	1,506 01	
Tolland,	300 00	
		20,103 41
Hampshire County.		
Amherst,	$1,996 03	
Chesterfield,	21 60	
Enfield,	505 00	
Greenwich,	1,525 00	
Hadley,	5,500 00	
Huntington,	178 89	
Middlefield,	840 64	
Plainfield,	445 76	
Southampton,	934 17	
Williamsburg,	331 68	
Worthington,	970 51	
		13,249 28
Middlesex County.		
Ashby,	$1,000 00	
Billerica,	2,486 10	
Boxborough,	675 00	
Burlington,	400 00	
Dunstable,	22 63	
Hudson,	1,000 00	
North Reading,	3,000 00	
Amounts carried forward,	$8,583 73	$73,018 01

EXPENDITURES UNDER "SMALL TOWN" ACTS — *Concluded.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$8,583 73	$73,018 01
Reading,	2,400 00	
Shirley,	2,050 00	
Stow,	1,000 00	
		14,033 73
Norfolk County.		
Bellingham,	$1,000 00	
Foxborough,	500 00	
		1,500 00
Plymouth County.		
Carver,	$2,000 00	
Duxbury,	500 00	
Plympton,	45 00	
Rockland,	1,125 00	
		3,670 00
Worcester County.		
Ashburnham,	$497 50	
Hardwick,	1,517 92	
Mendon,	1,575 00	
Millbury,	200 00	
New Braintree,	1,650 00	
Oakham,	1,200 00	
Oxford,	1,500 00	
Paxton,	2,055 38	
Phillipston,	950 00	
Princeton,	4,000 00	
Royalston,	52 35	
Rutland,	3,570 57	
Sturbridge,	1,950 00	
West Brookfield,	1,332 39	
Winchendon,	416 76	
		22,467 87
		$114,689 61

Repair and Maintenance Expenditures.

[Chapter 236, Acts of 1914.]

TOWN OR CITY.	Amount.	Totals.
Barnstable County.		
Barnstable,	$1,686 46	
Bourne,	581 53	
Brewster,	1,923 44	
Chatham,	1,467 85	
Dennis,	2,166 94	
Eastham,	840 84	
Falmouth,	2,689 91	
Harwich,	1,547 92	
Mashpee,	195 54	
Orleans,	1,101 60	
Provincetown,	474 98	
Sandwich,	1,480 06	
Truro,	1,530 34	
Wellfleet,	1,840 43	
Yarmouth (North),	734 63	
Yarmouth (South),	1,113 68	
		$21,376 15
Berkshire County.		
Adams,	$581 76	
Becket,	2,532 75	
Cheshire,	1,264 67	
Clarksburg,	352 83	
Dalton,	630 03	
Great Barrington,	588 48	
Hancock,	1,062 40	
Hinsdale,	235 56	
Lanesborough,	1,108 03	
Lee,	2,659 77	
Lenox,	2,144 70	
North Adams,	1,544 84	
Pittsfield,	2,510 19	
Richmond,	540 77	
Sheffield,	90	
Stockbridge,	783 77	
Williamstown,	549 28	
Windsor,	182 79	
		19,273 52
Bristol County.		
Acushnet,	$1,082 74	
Attleborough,	756 61	
Berkley,	366 67	
Dartmouth,	1,610 01	
Amounts carried forward,	$3,816 03	$40,649 67

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$3,816 03	$40,649 67
Dighton,	568 69	
Easton,	166 08	
Fairhaven,	227 00	
Freetown,	431 95	
Mansfield,	236 58	
North Attleborough,	1,108 81	
Norton,	1,674 95	
Raynham,	645 43	
Rehoboth,	6,907 41	
Seekonk,	2,949 59	
Somerset,	2,929 45	
Swansea,	2,422 10	
Taunton,	949 31	
Westport,	15,497 51	
		40,530 89
Dukes County.		
Chilmark,	$991 51	
Edgartown,	954 91	
Oak Bluffs,	1,206 50	
Tisbury,	563 12	
West Tisbury,	819 35	
		4,535 39
Essex County.		
Amesbury,	$898 09	
Andover,	3,443 20	
Beverly,	19,657 46	
Essex,	273 84	
Gloucester,	2,772 78	
Groveland,	428 89	
Hamilton,	934 01	
Haverhill,	2,708 14	
Ipswich,	1,043 31	
Lawrence,	177 90	
Lynn,	742 31	
Merrimac,	730 45	
Methuen,	2,784 51	
Middleton,	118 05	
Newbury,	1,806 21	
Newburyport,	619 39	
North Andover,	2,551 60	
Rockport,	1,349 22	
Rowley,	1,567 45	
Salem,	1,466 30	
Salisbury,	1,446 94	
Amounts carried forward,	$47,520 05	$85,715 95

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$47,520 05	$85,715 95
Saugus,	1,299 39	
Swampscott,	1,814 00	
Wenham,	921 43	
West Newbury,	1,459 05	
		53,013 92
Franklin County.		
Ashfield,	$136 61	
Bernardston,	627 85	
Buckland,	1,490 02	
Charlemont,	453 00	
Colrain,	192 42	
Deerfield,	11,769 71	
Erving,	1,543 60	
Greenfield,	1,071 73	
Montague,	952 79	
Northfield,	1,192 37	
Orange,	1,054 08	
Shelburne,	410 75	
Sunderland,	883 74	
Whately,	289 19	
		22,067 86
Hampden County.		
Agawam,	$1,310 60	
Brimfield,	297 62	
Chester,	1,811 14	
Chicopee,	829 03	
East Longmeadow,	373 14	
Holyoke,	1,060 17	
Monson,	123 55	
Palmer,	2,015 44	
Russell,	1,049 51	
Wales,	131 74	
West Springfield,	1,020 75	
Westfield,	2,076 12	
Wilbraham,	592 78	
		12,691 59
Hampshire County.		
Amherst,	$759 99	
Belchertown,	311 65	
Easthampton,	1,053 65	
Goshen,	375 00	
Granby,	633 38	
Hadley,	1,337 98	
Amounts carried forward,	$4,471 65	$173,489 32

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$4,471 65	$173,489 32
Hatfield,	555 98	
Huntington,	644 76	
Northampton,	859 31	
South Hadley,	1,987 32	
Southampton,	85 76	
Ware,	783 58	
Williamsburg,	468 27	
		9,856 63
Middlesex County.		
Acton,	$1,640 99	
Ashby,	1,842 21	
Ashland,	337 08	
Ayer,	79 76	
Bedford,	385 84	
Billerica,	165 19	
Boxborough,	636 90	
Burlington,	1,331 90	
Chelmsford,	1,439 39	
Concord,	1,174 86	
Dracut,	846 61	
Framingham,	1,106 29	
Groton,	706 41	
Holliston,	1,107 70	
Hudson,	399 27	
Lexington,	1,930 35	
Lincoln,	747 19	
Littleton,	917 25	
Lowell (East),	129 50	
Lowell (North),	361 28	
Lowell (South),	838 26	
Marlborough,	4,029 45	
Medford,	215 51	
Melrose,	104 78	
Natick,	1,726 08	
Newton,	368 08	
North Reading,	2,401 54	
Pepperell,	661 25	
Reading,	1,337 16	
Shirley,	46 00	
Somerville,	1,602 47	
Stoneham,	615 18	
Sudbury,	3,439 80	
Tewksbury,	1,723 50	
Townsend,	1,973 79	
Tyngsborough,	1,547 23	
Amounts carried forward,	$39,916 05	$183,345 95

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$39,916 05	$183,345 95
Watertown,	675 02	
Wayland,	25,886 33	
Westford,	495 43	
Weston,	911 16	
Wilmington,	671 98	
Winchester,	666 88	
Woburn,	1,224 62	
		70,447 47
Nantucket County.		
Nantucket,	$487 88	
		487 88
Norfolk County.		
Bellingham,	$488 95	
Braintree,	180 72	
Canton,	438 92	
Cohasset,	943 82	
Dedham,	285 72	
Dover,	755 77	
Foxborough,	863 72	
Franklin,	934 54	
Holbrook,	689 45	
Milton,	126 13	
Needham,	654 86	
Norfolk,	182 90	
Norwood,	365 06	
Plainville,	463 85	
Quincy,	546 37	
Randolph,	343 69	
Sharon,	104 61	
Stoughton,	459 74	
Walpole,	498 46	
Wellesley,	393 19	
Westwood,	145 36	
Weymouth,	2,274 16	
Wrentham,	1,301 97	
		13,441 96
Plymouth County.		
Abington,	$1,933 44	
Bridgewater,	385 60	
Brockton,	872 94	
Duxbury,	554 39	
Hanover,	548 27	
Hingham,	595 88	
Amounts carried forward,	$4,890 52	$267,723 26

REPAIR AND MAINTENANCE EXPENDITURES — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$4,890 52	$267,723 26
Kingston,	365 75	
Lakeville,	1,620 61	
Marion,	1,058 40	
Marshfield,	972 27	
Mattapoisett,	740 87	
Middleborough,	9,121 94	
Pembroke,	178 40	
Plymouth,	931 63	
Rochester,	1,682 25	
Rockland,	1,324 79	
Scituate,	910 16	
Wareham,	1,225 50	
West Bridgewater,	6,336 91	
Whitman,	496 91	
		31,856 91
Suffolk County.		
Boston,	$1,606 07	
Chelsea,	1,133 16	
Revere (East),	586 31	
Revere (West),	1,203 54	
		4,529 08
Worcester County.		
Ashburnham,	$225 73	
Athol,	633 00	
Auburn,	1,360 94	
Barre,	808 01	
Blackstone,	981 90	
Brookfield,	1,193 03	
Charlton,	1,847 63	
Douglas,	368 97	
Dudley,	703 22	
Fitchburg,	4,294 60	
Gardner,	706 91	
Grafton,	1,723 86	
Hardwick,	169 36	
Harvard,	628 11	
Holden,	965 59	
Lancaster,	543 92	
Leicester,	2,110 07	
Leominster,	746 29	
Lunenburg,	1,880 00	
Milford,	728 09	
Millbury,	1,817 14	
New Braintree,	34 86	
Amounts carried forward,	$24,471 23	$304,109 25

REPAIR AND MAINTENANCE EXPENDITURES — *Concluded.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$24,471 23	$304,109 25
North Brookfield,	403 14	
Northborough,	2,142 00	
Northbridge,	43 18	
Oxford,	834 74	
Paxton,	1,298 00	
Phillipston,	10,652 91	
Princeton,	381 61	
Rutland,	127 25	
Shrewsbury,	3,258 04	
Southborough,	690 08	
Southbridge,	75 02	
Spencer,	767 53	
Sterling,	1,228 34	
Sturbridge,	210 28	
Sutton,	678 31	
Templeton,	1,690 72	
Uxbridge,	854 84	
Warren,	885 58	
Webster,	290 65	
West Boylston,	1,089 87	
West Brookfield,	554 10	
Westborough,	105 27	
Westminster,	1,262 50	
Winchendon,	398 58	
Worcester,	1,495 69	
		55,889 46
		$359,998 71

Expenditures from Motor Vehicle Fees Fund.

[Chapter 534, Acts of 1909.]

Repair and Maintenance of Town and County Ways (Chapter 525, Acts of 1910).

TOWN OR CITY.	Amount.	Totals.
Barnstable County.		
Dennis,	$783 94	
Falmouth,	72 67	
Truro,	2,156 00	
Wellfleet,	1,429 36	
		$4,441 97
Berkshire County.		
Becket,	$1,219 85	
Cheshire,	58 35	
Egremont,	1,421 70	
Lanesborough,	180 60	
Lee,	500 00	
New Ashford,	1,110 97	
Richmond,	357 39	
Savoy,	1,671 28	
Williamstown,	7,759 41	
Windsor,	3,856 32	
		18,135 87
Bristol County.		
Dartmouth,	$3,000 00	
Dighton,	32 16	
Freetown,	3,276 84	
Norton,	2,725 00	
Somerset,	63 50	
		9,097 50
Essex County.		
Amesbury,	$2,049 06	
Danvers,	983 87	
Essex,	447 36	
Groveland,	500 00	
Ipswich,	282 25	
Lynnfield,	639 46	
Marblehead,	50 00	
Merrimac,	300 00	
Middleton,	1,616 76	
Newbury,	1,549 49	
Peabody,	7,232 58	
Rowley,	341 10	
Saugus,	1,546 95	
Topsfield,	2,010 96	
Wenham,	1,000 00	
		20,549 84
Amount carried forward,		$52,225 18

REPAIR AND MAINTENANCE, ETC. — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amount brought forward, . . .	. . .	$52,225 18
Franklin County.		
Ashfield,	$465 00	
Buckland,	526 10	
Shelburne,	1,106 42	
		2,097 52
Hampden County.		
Blandford,	$12,963 16	
Hampden,	750 00	
Longmeadow,	9,450 09	
Southwick,	3,043 31	
		26,206 56
Hampshire County.		
Amherst,	$6,805 72	
Cummington,	4,363 55	
Goshen,	4,801 88	
Granby,	30 38	
Huntington,	834 48	
South Hadley,	1,508 98	
Williamsburg,	1,058 48	
		19,403 47
Middlesex County.		
Acton,	$50 41	
Bedford,	2,703 47	
Billerica,	2,300 00	
Burlington,	698 59	
Concord,	5,000 00	
Littleton,	52 70	
Reading,	1,850 00	
Sherborn,	800 00	
Sudbury,	2,126 79	
Tewksbury,	67 00	
Wayland,	305 13	
		15,954 09
Norfolk County.		
Needham,	$3,477 85	
Sharon,	1,500 00	
		4,977 85
Plymouth County.		
Bridgewater,	$3,898 80	
Carver,	500 00	
East Bridgewater,	4,890 00	
Amounts carried forward, . . .	$9,288 80	$120,864 67

REPAIR AND MAINTENANCE, ETC. — *Concluded.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$9,288 80	$120,864 67
Kingston,	467 95	
Lakeville,	500 00	
Marshfield,	1,000 00	
Norwell,	367 30	
Rochester,	243 20	
		11,867 25
Worcester County.		
Ashburnham,	$7,095 47	
Athol,	3,980 42	
Barre,	500 00	
Dudley,	2,272 90	
Leicester,	1,613 66	
Mendon,	382 11	
Northbridge,	2,002 61	
Oakham,	150 00	
Oxford,	1,500 00	
Petersham,	300 55	
Rutland,	900 00	
Sterling,	1,050 00	
Sutton,	7,000 00	
Upton,	1,569 20	
Uxbridge,	149 25	
Warren,	132 30	
West Boylston,	475 83	
Westminster,	542 21	
Winchendon,	3,266 31	
		34,882 82
		$167,614 74

REPAIRS OF STATE HIGHWAYS.

TOWN OR CITY.	Amount.	Totals.
Barnstable County.		
Barnstable,	$8,787 74	
Bourne,	1,251 63	
Brewster,	431 45	
Chatham,	1,371 88	
Dennis,	769 28	
Eastham,	703 84	
Falmouth,	1,753 39	
Amount carried forward,	$15,069 21	

REPAIRS OF STATE HIGHWAYS — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amount brought forward,	$15,069 21	
Harwich,	738 68	
Mashpee,	12 59	
Orleans,	1,828 04	
Provincetown,	3,231 01	
Sandwich,	1,726 03	
Truro,	443 79	
Wellfleet,	175 53	
Yarmouth (north),	208 25	
Yarmouth (south),	5,429 30	
		$28,862 43
Berkshire County.		
Adams,	$40 50	
Becket,	1,470 52	
Cheshire,	339 70	
Clarksburg,	69 81	
Dalton,	311 71	
Great Barrington,	10,874 88	
Hancock,	759 27	
Hinsdale,	17 02	
Lanesborough,	58 86	
Lee,	663 62	
Lenox,	759 40	
North Adams,	852 46	
Pittsfield,	22,686 11	
Richmond,	566 89	
Sheffield,	48 57	
Stockbridge,	62 34	
Williamstown,	359 46	
Windsor,	312 79	
		40,253 91
Bristol County.		
Acushnet,	$266 45	
Attleborough,	3,447 17	
Berkley,	162 86	
Dartmouth,	1,047 13	
Dighton,	3,505 10	
Easton,	72 39	
Fairhaven,	9,460 66	
Freetown,	465 63	
Mansfield,	104 24	
North Attleborough,	9,458 28	
Norton,	185 84	
Raynham,	337 88	
Rehoboth,	553 21	
Seekonk,	12,480 40	
Somerset,	3,425 18	
Amounts carried forward,	$44,972 42	$69,116 34

REPAIRS OF STATE HIGHWAYS — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$44,972 42	$69,116 34
Swansea,	844 92	
Taunton,	2,593 14	
Westport,	791 83	
		49,202 31
Dukes County.		
Chilmark,	$1,548 37	
Edgartown,	298 81	
Oak Bluffs,	57 11	
Tisbury,	674 45	
West Tisbury,	1,809 39	
		4,388 13
Essex County.		
Amesbury,	$43 17	
Andover,	459 76	
Beverly,	1,398 55	
Essex,	69 85	
Gloucester,	275 49	
Groveland,	18 42	
Hamilton,	47 39	
Haverhill,	204 12	
Ipswich,	36 09	
Lawrence,	15,027 00	
Lynn,	50 94	
Merrimac,	16 58	
Methuen,	68 69	
Newbury,	85 65	
Newburport,	103 61	
North Andover,	51 21	
Rockport,	159 40	
Rowley,	93 48	
Salem,	341 05	
Salisbury,	590 13	
Saugus,	13 99	
Swampscott,	150 06	
Wenham,	100 27	
West Newbury,	75 35	
		19,480 25
Franklin County.		
Ashfield,	$8 99	
Bernardston,	210 69	
Buckland,	5,871 35	
Charlemont,	289 93	
Colrain,	47 54	
Deerfield,	7,882 85	
Erving,	317 06	
Greenfield,	866 18	
Amounts carried forward,	$15,494 59	$142,187 03

REPAIRS OF STATE HIGHWAYS — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$15,494 59	$142,187 03
Montague,	268 66	
Northfield,	358 27	
Orange,	220 96	
Shelburne,	5,460 28	
Sunderland,	5,632 98	
Whately,	24 27	
		27,460 01
Hampden County.		
Agawam,	$50 36	
Chester,	1,251 56	
Chicopee,	51 17	
East Longmeadow,	16 17	
Holyoke,	6,913 24	
Monson,	7 62	
Palmer,	5,743 78	
Russell,	7,834 72	
West Springfield,	43	
Westfield,	9,892 39	
Wilbraham,	58 34	
		31,819 78
Hampshire County.		
Amherst,	$25 93	
Belchertown,	72 53	
Easthampton,	42 63	
Goshen,	626 34	
Granby,	130 64	
Hadley,	8,803 28	
Hatfield,	33 60	
Huntington,	204 15	
Northampton,	9,889 22	
South Hadley,	309 84	
Ware,	12 14	
Williamsburg,	390 54	
		20,540 84
Middlesex County.		
Acton,	$213 92	
Ashby,	54 12	
Ashland,	830 72	
Ayer,	6 13	
Bedford,	29 50	
Billerica,	13 67	
Boxborough,	265 30	
Burlington,	23 23	
Chelmsford,	2,446 42	
Concord,	261 99	
Dracut,	18 75	
Amounts carried forward,	$4,163 75	$222,007 66

REPAIRS OF STATE HIGHWAYS — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$4,163 75	$222,007 66
Framingham,	82 44	
Groton,	75 45	
Holliston,	351 32	
Hudson,	68 11	
Lexington,	776 78	
Lincoln,	362 46	
Littleton,	897 51	
Lowell (north),	17 75	
Lowell (south),	266 67	
Lowell (east),	60 07	
Marlborough,	204 46	
Medford,	11,232 08	
Natick,	13,963 95	
Newton,	4,080 79	
North Reading,	53 92	
Pepperell,	149 35	
Reading,	12,775 45	
Shirley,	3 62	
Somerville,	1,584 97	
Stoneham,	12,202 86	
Sudbury,	187 69	
Tewksbury,	272 26	
Townsend,	386 28	
Tyngsborough,	395 20	
Watertown,	25 49	
Wayland,	1,273 43	
Westford,	4,719 06	
Weston,	1,489 80	
Wilmington,	43 66	
Winchester,	3,008 45	
Woburn,	171 40	
		75,346 48
Nantucket County.		
Nantucket,	$363 85	
		363 85
Norfolk County.		
Bellingham,	$21 43	
Braintree,	124 79	
Canton,	1,079 28	
Cohasset,	231 76	
Dedham,	22 33	
Dover,	254 02	
Foxborough,	322 95	
Franklin,	387 35	
Holbrook,	400 58	
Milton,	1,548 31	
Amounts carried forward,	$4,392 80	$297,717 99

REPAIRS OF STATE HIGHWAYS — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$4,392 80	$297,717 99
Needham,	184 18	
Norfolk,	264 19	
Norwood,	6,168 80	
Plainville,	4,372 39	
Quincy,	205 19	
Randolph,	249 61	
Sharon,	34 89	
Stoughton,	258 07	
Walpole,	9,228 77	
Wellesley,	2 56	
Westwood,	161 55	
Weymouth,	3,659 37	
Wrentham,	3,146 88	
		32,329 25
Plymouth County.		
Abington,	$792 55	
Bridgewater,	221 30	
Brockton,	3,092 54	
Duxbury,	246 89	
Hanover,	50 50	
Hingham,	164 24	
Kingston,	73 33	
Lakeville,	671 22	
Marion,	7,901 23	
Marshfield,	4,110 08	
Mattapoisett,	1,540 66	
Middleborough,	4,845 23	
Pembroke,	68 07	
Plymouth,	1,682 00	
Rochester,	336 45	
Rockland,	90 67	
Scituate,	3,177 08	
Wareham,	6,071 58	
West Bridgewater,	4,814 50	
Whitman,	1,637 74	
		41,587 86
Suffolk County.		
Boston,	$354 53	
Chelsea,	25 90	
Revere (east),	72 86	
Revere (west),	25 87	
		479 16
Worcester County.		
Ashburnham,	$49 78	
Athol,	21 81	
Auburn,	570 73	
Amounts carried forward,	$642 32	$372,114 26

REPAIRS OF STATE HIGHWAYS — *Continued.*

TOWN OR CITY.	Amount.	Totals.
Amounts brought forward,	$642 32	$372,114 26
Barre,	212 07	
Blackstone,	227 74	
Brookfield,	709 38	
Charlton,	1,753 52	
Douglas,	317 29	
Dudley,	234 83	
Fitchburg,	277 65	
Gardner,	2,087 03	
Grafton,	134 55	
Hardwick,	9 50	
Harvard,	165 21	
Holden,	2,126 98	
Lancaster,	75 95	
Leicester,	785 06	
Leominster,	83 59	
Lunenburg,	225 53	
Milford,	81 68	
Millbury,	257 27	
New Braintree,	1 01	
North Brookfield,	18	
Northborough,	150 75	
Oxford,	663 03	
Paxton,	1,064 74	
Phillipston,	297 97	
Princeton,	731 94	
Rutland,	3,562 37	
Shrewsbury,	15,821 00	
Southborough,	683 97	
Spencer,	263 16	
Sterling,	366 91	
Sutton,	428 84	
Templeton,	195 26	
Uxbridge,	51 44	
Warren,	487 66	
Webster,	49 67	
West Boylston,	121 50	
West Brookfield,	248 20	
Westborough,	1,420 64	
Westminster,	1,093 89	
Winchendon,	92 00	
Worcester,	22,369 33	
		60,572 61
		$432,686 87

REPAIRS OF STATE HIGHWAYS — *Concluded.*

Repairs of State highways,		$432,686 87
Cost of engineering,		53,981 44
Purchase of gravel pits at Dartmouth,		636 00
Traffic census,		29 49
Analysis of tar and oil,		2,155 22
Machinery account: —		
2 steam rollers,	$6,150 00	
10 automobiles,	3,984 35	
8 tar kettles,	541 67	
4 road machines,	620 00	
1 sweeper, with extra broom,	250 00	
1 road drag,	18 00	
1 spraying machine,	575 00	
1 steel grader,	175 00	
1 motor cycle,	215 00	
1 light oil wagon,	475 00	
2 handy wagons, two sets yokes, etc.,	47 00	
1 portable compressor outfit,	800 00	
1 Syracuse plow,	20 00	
1 Gilmore plow,	8 00	
1 Monarch distributor,	610 00	
2 Monarch distributor attachments,	550 00	
2 gasoline engines with pumps,	324 00	
2 tents,	141 03	
8 gravel screens,	52 00	
1 pouring pot,	4 00	
1 hot oil mixer,	750 00	
1 Kinney oil pressure distributor,	600 00	
1 distributor pipe, 8 nozzles,	13 00	
Rent, light, heat and fuel,	596 01	
Salaries, labor and expense,	8,773 01	
Freight and express,	715 04	
Tools and apparatus,	1,701 73	
Materials and repairs,	295 23	
Supplies, parts and fittings,	1,538 79	
Auto expense (supplies, repairs and storage),	5,066 36	
Motor cycles (supplies and repairs),	499 04	
Miscellaneous items,	589 64	
		36,697 90
Total, State highways,		$526,186 92
Expenditures under chapter 525, Acts of 1910,		167,614 74
Amount carried forward,		$693,801 66

Amount brought forward,		$693,801 66

AUTOMOBILE DEPARTMENT EXPENSE.

Salaries of clerks and clerical assistants,	$62,827 33	
Rent of offices,	3,380 89	
Number plates, motor cycle seals and speed signs,	32,993 10	
Printing,	9,491 67	
Postage,	6,177 06	
Typewriters purchased and rented,	1,163 17	
Office supplies,	2,408 05	
Cartage and storage,	1,386 81	
Miscellaneous items, including express charges, car fares, telegrams and other minor office expenses,	316 09	
Total, automobile department,		120,144 17

EXAMINER'S DEPARTMENT EXPENSE.

Salaries of inspectors and examiners,	$16,963 46	
Salaries of clerks and stenographers,	3,274 00	
Rent,	777 00	
Mileage books,	1,680 00	
Traveling expenses,	3,822 91	
Printing,	445 59	
Postage, including stamped envelopes,	170 00	
Office supplies,	101 49	
Newspaper clippings,	120 00	
Miscellaneous items,	77 45	
Total, examiner's department,		27,431 90
Rebates of automobile fees,		9,025 00
Total, motor vehicle fees fund,		$850,402 73

GENERAL EXPENSES, DEC. 1, 1913, TO NOV. 30, 1914.

[Under Chapter 236, Acts of 1914.]

Salaries of commissioners,	$13,000 00
Travel of commissioners,	3,101 28
Travel and expense of chief engineer,	552 25
Salaries of clerical assistants and principal assistant engineers,	26,347 29
Rent of offices,	6,844 28
Amount carried forward,	$49,845 10

Amount brought forward,	$49,845 10
Printing and binding annual report,	1,524 43
Printing,	2,245 62
Postage, including postal cards and envelopes,	2,092 64
Office and typewriter supplies,	821 17
Telephone, including tolls,	951 38
Recording land takings and easements,	220 04
Advertising hearings,	57 38
Rental and repair of typewriters,	31 33
Repairs to steam road rollers and other road machinery,	12,571 89
Computing machine,	285 00
Miscellaneous items, including express charges, car fares, telegrams and other minor office expenses,	676 39
	$71,322 37

Brightman Street bridge at Fall River: —

Pay rolls,	$6,651 75
Electric service and lighting,	1,216 19
Telephone service,	41 89
Paint and painting,	4,817 50
Repairs,	888 09
Tools and supplies,	218 60
Miscellaneous,	11 92
	$13,845 94

Merrimack River bridge at Newburyport: —

Pay rolls,	$2,634 04
Paint and painting,	342 06
Electric service and lighting,	122 50
Telephone service,	34 35
Repairs,	259 40
Tools and supplies,	333 57
Miscellaneous,	144 29
	$3,870 21

Miscellaneous Expenditures.

[Under Chapter 677, Acts of 1911, and Chapter 646, Acts of 1912.]

Expenditures for the construction of a highway over Hoosac Mountain, between the city of North Adams and the valley of the Deerfield River,	$13,526 76

[Under Chapters 416 and 744, Acts of 1911, and Chapter 236, Acts of 1914.]

Expenditures for the repair of a certain highway in the town of Truro,	$500 00

[Under Chapter 703, Acts of 1912.]

Expenditures for the construction or improvement of a highway between the towns of Ware and West Brookfield, . $13,131 24

[Under Chapter 627, Acts of 1912, and Chapter 731, Acts of 1913.]

Expenditures for the improvement of a highway between the towns of Dalton and Goshen in the counties of Berkshire and Hampshire, ... $2,388 11

[Under Chapter 647, Acts of 1912, and Chapter 713, Acts of 1913.]

Expenditures for the improvement of a highway along the northerly bank of the Merrimac River in the towns of Dracut and Methuen, ... $14,990 05

[Under Chapter 639, Acts of 1913.]

Expenditures for the laying out and construction of a so-called traffic road in the town of Revere, extending southerly from the Point of Pines, ... $141,789 62

[Under Chapter 730, Acts of 1913.]

Expenditures for the improvement of a highway leading from the town of Hinsdale to the town of Chester through the town of Middlefield, ... $1,033 06

[Under Chapter 778, Acts of 1913.]

Expenditures for the laying out and construction of Humphrey Street in the town of Swampscott, ... $36,388 26

[Under Chapter 57, Resolves of 1913.]

Expenditures for an investigation relative to the laying out a State highway on North Beacon Street in the city of Boston and the town of Watertown, ... $35 39

[Under Chapter 88, Resolves of 1913.]

Expenditures for repairing the road on the Province Lands in the town of Provincetown, ... $2,615 21

[Under Chapter 128, Resolves of 1913.]

Expenditures for the construction of the River Road, so called, between the town of Williamstown and the city of Pittsfield, ... $9,154 38

[Under Chapter 502, Acts of 1914.]

Expenditures for the improvement of a highway between the towns of Dalton and Goshen in the counties of Berkshire and Hampshire, ... $10,000 00

[Under Chapter 503, Acts of 1914.]

Expenditures for the improvement of the highway leading from the town of Hinsdale to the town of Chester through the town of Middlefield, ... $9,247 34

[Under Chapter 668, Acts of 1914.]

Expenditures for the improvement of the highway leading from the town of Holden to the town of Rutland, . . $1,395 56

[Under Chapter 711, Acts of 1914.]

Expenditures for the highway leading from the town of Milford to the town of Southborough through the town of Hopkinton, ... $1,667 03

[Under Chapter 733, Acts of 1914.]

Expenditures for the construction and maintenance of a State highway in the town of Egremont, ... $267 91

[Under Chapter 756, Acts of 1914.]

Expenditures for the improvement of a highway in the towns of Becket, Washington and Hinsdale, . . . $2,156 67

[Under Chapter 779, Acts of 1914.]

Expenditures for the improvement of a highway in the towns of Southbridge, Dudley and Webster, . . . $287 19

[Under Chapter 78, Resolves of 1914.]

Expenditures for the further construction of the River Road, so called, from the town of Williamstown to the city of Pittsfield, ... $1,840 55

SUMMARY OF EXPENDITURES.

For construction, ...	$945,676 00
For construction under "small town" acts, ...	114,689 61
For road repair and maintenance, from revenue, . . .	359,998 71
For road construction under chapter 525, Acts of 1910, .	167,614 74
For road repair and maintenance (motor vehicle fees fund),	526,186 92
For expenditures connected with automobile registration,	120,144 17
For expenses of examiners and investigators, . . .	27,431 90
For rebates of automobile fees, under chapter 534, Acts of 1909, ...	9,025 00
For general expense under chapter 236, Acts of 1914, .	71,322 37
Amount carried forward, ...	$2,342,089 42

Amount brought forward, ...	$2,342,089 42
For expenditures under chapter 236, Acts of 1914 (bridge),	17,716 15
For expenditures under chapter 236, Acts of 1914 (Truro),	500 00
For expenditures under chapter 677, Acts of 1911, and chapter 646, Acts of 1912, ...	13,526 76
For expenditures under chapter 703, Acts of 1912, . .	13,131 24
For expenditures under chapter 128, Resolves of 1913, .	9,154 38
For expenditures under chapter 627, Acts of 1912, and chapter 731, Acts of 1913, ...	2,388 11
For expenditures under chapter 647, Acts of 1912, and chapter 713, Acts of 1913, ...	14,990 05
For expenditures under chapter 639, Acts of 1913, . .	141,789 62
For expenditures under chapter 730, Acts of 1913, . .	1,033 06
For expenditures under chapter 778, Acts of 1913, . .	36,388 26
For expenditures under chapter 57, Resolves of 1913, .	35 39
For expenditures under chapter 88, Resolves of 1913, .	2,615 21
For expenditures under chapter 502, Acts of 1914, . .	10,000 00
For expenditures under chapter 503, Acts of 1914, . .	9,247 34
For expenditures under chapter 668, Acts of 1914, . .	1,395 56
For expenditures under chapter 711, Acts of 1914, . .	1,667 03
For expenditures under chapter 733, Acts of 1914, . .	267 91
For expenditures under chapter 756, Acts of 1914, . .	2,156 67
For expenditures under chapter 779, Acts of 1914, . .	287 19
For expenditures under chapter 78, Resolves of 1914, .	1,840 55
	$2,622,219 90

WM. D. SOHIER,
F. D. KEMP,
JAMES W. SYNAN,
Massachusetts Highway Commission.

Appendix A.

Report of the Chief Engineer.

Dec. 1, 1914.

To the Massachusetts Highway Commission.

Gentlemen: — In addition to the information previously furnished to your Board for use in your annual report, I respectfully submit the following details: —

Surveys, Estimates and Designs.

During the year, preliminary surveys, plans and estimates were made on contemplated State highways in 41 towns, covering an aggregate distance of 65.62 miles. Lines and grades for construction work on State highways have been made in 51 towns, covering an aggregate distance of 73.77 miles, some of this work having been done on roads upon which construction was commenced in 1913. Final surveys and measurements were made on completed State highways in 53 towns, covering an aggregate distance of 82.11 miles. On "small town" work, so called, preliminary surveys, including plans and profiles, were made in 92 towns, covering an aggregate distance of 82 miles. In addition to the above, surveys have been made in 10 towns of roads to be constructed by towns, covering an aggregate distance of 5.2 miles, and, under special acts of the Legislature, surveys have been made in 7 towns, covering an aggregate distance of 12.18 miles. Layout plans have been made of roads in 44 towns, covering an aggregate distance of 58.70 miles. Plans to accompany decrees for street railway locations on State highways have been made in 33 towns.

Bridges.

The following is a list of bridges built or contracted for during the year: —

Becket — over Walker Brook; concrete beam, 32-foot span.
Becket — over Corporation Brook; concrete beam, 16-foot span.
Becket — over Walker Brook; concrete beam, 32-foot span.
Becket — over Rudd Pond outlet; concrete arch, 14-foot span.
Becket — over branch of Walker Brook; concrete beam, 11½-foot span.
Buckland — over Clesson's Brook; concrete beam, 24-foot span.

Charlton — over Cady Brook; concrete slab, 10½-foot span.
Cheshire — over branch of Hoosick River; concrete arch, 7-foot span.
Dighton — over Muddy Cove; concrete beam, 28-foot span.
Lanesborough — over Town Brook; concrete beam, 14-foot span.
Lanesborough — over Town Brook; concrete beam, 14-foot span.
Mansfield — over Rumford River; concrete beam, 18-foot span.
Middleton — over Swan Pond Brook; concrete beam, 16-foot span.
Natick — over Stillman's Brook; concrete arch, 10-foot span.
Orleans — over creek at Pleasant Bay; concrete slab, 10-foot span.
Revere — over Boston, Revere Beach & Lynn Railroad; steel truss, 130-foot span.
Shirley — over Mulpus Brook; concrete beam, 15-foot span.
Shirley — over Bow Brook; concrete slab, 7-foot span.
Southwick — over Mum Brook; concrete beam, 15-foot span.
Sterling — over Wickapee Brook; concrete beam, 16-foot span.
Sudbury — over Pantry Brook; concrete slab, 10-foot span.
Uxbridge — over Mumford River; concrete beam, 34-foot span.
Uxbridge — over Rivulet Brook; concrete beam, 18-foot span.
Williamsburg — over Mill River; concrete beam, 35-foot span.
Williamstown — over Green River; concrete beam, two 25-foot spans.
Wrentham — over Pearl Hill Brook; concrete slab, 16-foot span.

Designs and estimates have also been made for contemplated bridges as follows: —

Becket — concrete beam, 20-foot span.
Charlton — over Cady Brook; concrete beam, 20-foot span.
Hinsdale — concrete slab, 12-foot span.
Lee — over Housatonic River; concrete beam, two 39½-foot spans.
Salisbury — over Black Rock Creek; concrete beam, 16½-foot span.
Sheffield — over Konkapot River; concrete beam, 35-foot span.
Wareham — over New York, New Haven & Hartford Railroad; concrete beam, 35-foot span.
Wayland — over Boston & Maine Railroad; steel girder, 56-foot span.
Williamstown — over Green River; concrete beam, 39-foot span.
Williamstown — over Green River; concrete arch, 50-foot span.

State Highways.

Construction has been completed of 42.53 miles on contracts that were pending at the beginning of the year, and construction has also been completed of 33.63 miles of roads on which work was commenced during the present year, making a total of 76.16 miles of construction completed during the year. Up to the present time 1,039.07 miles have been laid out as State highway.

Construction has been commenced but not completed on 13.74 miles of roads in 38 towns.

Of the above roads completed this year, 4.79 miles were of water-bound macadam; 3.11 miles were of gravel; 5.53 miles were of sand bound with oil; 35.84 miles were of bituminous macadam, that is, macadam with bituminous binder incorporated in the top course; 3.90 miles were of water-bound macadam with an oil surface applied; 3.19 miles were of gravel with the top surface bound with bituminous binder; 2.20 miles were of cement concrete; 2.50 miles were of sand and clay; and 15.10 miles were graded.

Bituminous material has been used in the maintenance of State highways during the present year on 513 miles, and, in construction, on 48.46 miles; and there are at present 986.19 miles of State highways on which bituminous material has been used either in construction or maintenance.

"Small Town" Work.

Under the provisions of the "small town" act, roads were constructed during the year in 91 towns, and contracts were made but not completed in 18 towns.

Permits.

Eight hundred and thirty permits have been issued during the year for opening or occupying State highways for various purposes.

Specifications approved.

Under the provisions of chapter 719, Acts of 1913, and chapter 317, Acts of 1914, specifications have been approved for the construction of roadways in 11 cities and 14 towns.

Advice to Towns.

During the year engineering advice, so far as record has been kept, has been given to officials in 48 towns and cities. The advice requested related to all classes of highway work, from the maintenance of dirt roads to the construction of block pavements and highway bridges. While accurate cost of the work on which advice has been given could not be obtained, the approximate cost of such work is $373,000.

Respectfully submitted,

A. W. DEAN,
Chief Engineer.

TABLE SHOWING APPROXIMATE COSTS OF GRADING AND DRAINAGE, SEPARATED FROM SURFACE COSTS, ON ROADS COMPLETED IN 1914.

TOWN.	Type of Surface.	Basis of Calculation.		Drainage, Culverts and Bridges, Total Cost.	Grading and Foundation, Cost per Mile.	Cost of Surface.	
		Miles.	Square Yards.			Per Mile.	Per Square Yard.
Acton-Concord, 1913,	Macadam, 5-inch, local stone, bituminous binder (18 feet),	1.10	11,980	$1,687	$2,956	$7,603	$0 72
Ayer-Shirley, 1913,	Macadam, 5-inch, trap rock, concrete bridge (18 feet),	1.77	18,691	7,824	3,462	7,603	72
Ayer, 1914,	Macadam, 7-inch, trap rock, bituminous binder (18 feet),	.39	4,118	–	1,566	12,355	1 17
Berkley, 1913,	Macadam, 4½-inch, local stone, bituminous binder (15 feet),	.49	4,350	645	3,557	6,072	69
Blackstone, 1913,	Macadam, 6-inch, trap rock, bituminous binder, concrete bridge,	1.15	17,532	16,695	2,727	15,855	1 04
Brockton, 1914,	Macadam, 4-inch, local stone, bituminous binder (18 feet),	.61	6,442	182	3,534	8,870	84
Charlton, 1914,	Macadam, 4-inch, local stone, bituminous binder (15 feet),	1.01	8,900	693	5,622	5,129	58
Grafton, 1913,	Macadam, 6-inch, local stone, bituminous binder (18 feet),	1.47	15,523	4,617	4,423	10,138	96
Lee, 1913,	Macadam, 4-inch, local stone, bituminous binder (18 feet),	.83	8,800	834	8,388	6,614	62
Lunenburg, 1913,	Macadam, 4½-inch, local stone, bituminous binder (18 feet),	1.76	18,619	2,561	3,734	8,229	77
Middleton, 1913,	Macadam, 5-inch, local stone, bituminous binder (16 feet),	.82	7,838	–	7,163	6,786	71
North Andover, 1913,	Concrete surfacing, 6-inch (16.5 feet),	1.99	19,285	5,297	1,575	13,552	1 40
Oxford, 1914,	Macadam, 2-inch, trap rock, bituminous binder (15 feet),	.59	5,200	62	5,147	4,146	47
Pittsfield, 1913,	Macadam, 4-inch, trap rock, bituminous binder, 2 concrete bridges (18 feet),	.59	6,220	7,422	12,552	10,771	1 02
Plymouth, 1914,	Sand and oil mixed, 4-inch (16 feet),	1.36	12,807	–	1,427	4,708	50
Raynham, 1913,	Macadam, 4-inch, local stone, bituminous binder (18 feet),	1.72	18,172	724	2,749	6,698	63
Sheffield, 1913,	Gravel, 6-inch (15 feet),	1.37	12,056	1,664	4,402	2,288	26
Sunderland, 1914,	Macadam, 5-inch, trap rock (15 feet),	1.44	12,672	916	1,722	7,040	80
Taunton, 1913,	Macadam, 5-inch, local stone, bituminous binder,	.43	3,820	–	2,935	5,963	68
Whitman, 1913,	Macadam, 5-inch, local stone, bituminous binder (18 feet),	1.39	14,744	810	3,288	7,709	73

Appendix B.

Relating to the Work of the Automobile Department.

Statement showing the Number of Registration Certificates and Licenses to operate issued during the Fiscal Year 1914, also the Fees received for the same, together with the Fees for Examinations, for Copies of Certificates of Registration and Licenses, etc., and Fines for Violation of the Automobile Law.

Certificates of registration: —			
Automobiles,	77,246		$754,059 00
Motor cycles,	8,161		15,572 00
Manufacturers and dealers,	1,518		44,680 00
Licenses to operate: —			
Operators,	21,257 at	$2 00	42,514 00
Chauffeurs,	5,601 at	2 00	11,202 00
Operators' renewals,	51,090 at	50	25,545 00
Chauffeurs' renewals,	21,584 at	50	10,792 00
Examinations,	7,497 at	2 00	14,994 00
Copies of certificates and licenses furnished,	3,241 at	50	1,620 50
Number plates and seals,			1,482 25
Miscellaneous receipts, including interest on deposits,			3,504 00
Amount received at the office of the commission,			$925,964 75
Court fines received by the Treasurer and Receiver-General,			39,689 84
Total receipts for the year,			$965,654 59

Report of the Examining and Investigating Department.

F. I. Bieler, *Secretary, Massachusetts Highway Commission.*

Dear Sir: — I respectfully submit the following as the eighth annual report of the examining and investigating department, for the period from Dec. 1, 1913, to Dec. 1, 1914.

Examinations.

During the year, examinations have been held daily in Boston, and either once a week or every other week in Pittsfield, Springfield, Worcester, Fitchburg, Brockton, New Bedford, Fall River, Lowell and Salem. By request, a few examinations have been conducted in other cities, the applicant demonstrating on some

type of motor vehicle which could not be taken to the regular place of examination.

In comparison with the statistics of last year, the following features may be noted: —

	1913.	1914.
Total number of examinations (chauffeurs),	7,255	7,504
Total number of examinations (operators),	56	55
Total number of examinations (chauffeurs reported unfit),	2,046	2,604
Total number of examinations (operators reported unfit),	19	20
Total number of chauffeurs examined,	5,802	5,610
Total number of chauffeurs passed,	5,139	4,900
Total number of chauffeurs failed to receive licenses,	663	710
Total number of operators examined,	45	49
Total number of operators passed,	37	35
Total number of operators failed to receive licenses,	8	14

It will be seen from these statistics that there has been a decrease of 188 in the number of persons examined, and an increase of 248 in the number of examinations conducted. Five hundred and fifty-nine more persons have been reported unfit, indicating that applicants are not so well prepared as in former years. The number of persons who finally passed the examination decreased 241. On the basis of percentage, 12.79 per cent. finally failed, as against 11.47 per cent. for 1913. Of the total number of persons examined, 49 were applicants for operators' licenses and were given 55 examinations. Of this number, 35 finally passed and 14 failed. More than half of the total number of examinations (3,947) were conducted in Boston, the balance (3,612) in other cities. Nearly all of these examinations have been conducted by examiners C. G. Hubbell and C. E. Lathrop, who have been assisted, when necessary, by the inspectors.

Investigations and Prosecutions.

A comparison of the number of cases investigated in 1913 and 1914 is given below: —

	1913.	1914.
Accidents (nonfatal),	259	263
Accidents (fatal),	183	235
Accidents (brief reports),	103	325
General reputation,	21	69
Miscellaneous,	90	145
Garages, dealers,	206	189[1]
Total number of reports received from investigators,	862	1,226
Garages inspected,	288	440
Prosecutions,	47	77
Total amount of fines imposed in above cases,	$2,015	$2,435

[1] To September only.

There were 228 fatal accidents, resulting in 241 deaths. Two hundred and twenty-nine of the deaths occurred in Massachusetts, 3 in Vermont, 3 in New Hampshire, 1 in Maine, 2 in Rhode Island and 3 in New York. These last 12 were investigated for the reason that the operators were residents of this State. Of the 229 deaths which occurred in Massachusetts, 3 were the result of falling from automobiles, 1 from asphyxiation by gas fumes, 5 from natural causes, 1 from tetanus, 1 from pneumonia, 1 from explosion of gasoline, 1 crushed when the body of a truck on which he was working fell. One of the 3 occurring in New York resulted from tetanus. These last 14 deaths may be regarded as having been only indirectly connected with the operation of automobiles. Of the 235 reports received from investigators this year concerning fatal accidents, 10 occurred during the fiscal year 1913.

On April 1, 1914, Anthony A. Bonzagni was appointed to the position of inspector and examiner. On June 22, 1914, Ernest L. Blish returned to the department after a leave of absence of one year.

As in the previous year, the State has been divided into seven districts, each district being in charge of an inspector, with instructions to investigate all serious accidents occurring in his district, as well as to report on such violations of the automobile law as he saw fit. The dividing of the State into districts has proven successful, as it has enabled each inspector to become thoroughly acquainted with the district in which he investigates. In addition, we have two inspectors unassigned to any particular district, their duties being to assist the other inspectors when necessary, and to investigate such cases as may be assigned them from the office.

During the year, we have inspected 440 garages and dealers, to ascertain if they were complying with the automobile law. Up to September 1, those who were found violating the law were reported to the commission, with a recommendation that a cautionary letter be sent. Since that date, such cautionary letters have been sent from this department. In a few cases, where the dealers have violated the law, we have prosecuted them before the courts. The department has investigated 325 accidents, concerning which brief reports have been filed, the cases not being considered serious enough to call to the attention of the Board.

We have received 9,199 newspaper clippings referring to acci-

dents and prosecutions in which motor vehicles were involved. Many of these clippings were duplicates.

As a result of chapter 530 of the Acts of 1913, the department has received 8,205 letters from operators who have been involved in accidents. Many of these letters refer to the same accident where more than one motor vehicle was involved, each operator having reported. In addition, a locality card file has been kept, showing plainly the number of accidents which have occurred in each city and town.

Deaths and Injuries from Automobile and Motor Cycle Accidents.

A comparison of the figures for the year 1914 with those of 1913 is given below: —

	Killed.		Injured.	
	1913.	1914.	1913.	1914.
Pedestrians,	111	150	1,476	2,303
Occupants of automobiles,	47	56	783	879
Motor cycle riders,	13	18	221	337
Bicycle riders,	8	3	190	256
Occupants of carriages,	9	2	229	217
Street car passengers,	–	–	24	18
Totals,	188	229	2,923	4,010

There were also quite a large number of accidents of a trivial nature that were reported by letter, where there was no serious injury to person or property.

Deaths and Injuries from Automobile Accidents, Fiscal Year 1914.

	Killed.	Injured.
Pedestrians,	140	2,219
Occupants of automobiles,	56	872
Occupants of carriages,	2	212
Bicycle riders,	3	242
Street car passengers,	–	18
Totals,	201	3,563

Deaths and Injuries from Motor Cycle Accidents, Fiscal Year 1914.

	Killed.	Injured.
Pedestrians,	10	84
Motor cycle riders,	18	337
Occupants of automobiles,	–	7
Occupants of carriages,	–	5
Bicycle riders,	–	14
Totals,	28	447

Seventy-five per cent. of the above accidents occurred in the daytime and 25 per cent. after dark. Seventy-four per cent. of the accidents occurred on the streets of the cities and towns, and 26 per cent. on the country roads.

Probation.

During the year, 23 chauffeurs or operators, who had been placed on probation by the Board, were required to report regularly each month to a representative of this department. Of this number, 18 have fully complied with the terms of their probation, while 5, for not properly keeping such terms, have had their licenses either suspended or revoked.

Comparison of Analysis of Abstracts of Court Records for the Fiscal Year 1913 with the Fiscal Year 1914.

	1913.	1914.
Number of courts that have forwarded abstracts,	79	94
Total number of abstracts received,	5,107	5,491
Persons guilty of operating unlawfully,	4,136	4,951
Persons not guilty of operating unlawfully,	194	212
Cases appealed to a higher court,	289	492
Complaints placed on file,	972	1,148
Complaints *nol prossed*,	175	226
Defendants defaulted,	22	20
Persons committed to imprisonment,	31	31
Complaints brought: —		
For manslaughter,	3	10
For overspeeding,	1,657	2,039
For reckless operating,	151	143
For operating in a race,	2	–
For operating while intoxicated,	140	198
For using automobile without authority,	56	72
For endangering lives and safety of the public,	67	72
For failing to stop after causing injury,	40	54
For improper display or no register number,	81	103
For operating without a license,	377	377
For operating without carrying registration certificate,	105	126
For operating an unregistered motor vehicle,	59	94
For refusing to stop when signaled by officer,	99	121
For operating with unlighted lamps,	481	251
For violations of park rules,	164	133
For failure to give signal when approaching intersecting way,	1,166	1,177
For miscellaneous offences,	729	727

Fines, etc., as shown by Court Abstracts.

	1913.	1914.
For violating State statutes,	$41,043 50	$33,654 00
For violating metropolitan park rules,	973 00	1,010 00
For cost of court,	2,786 45	1,616 94
Totals,	$44,802 95	$36,280 94

Respectfully submitted,

F. L. AUSTIN,
Chief Examiner and Inspector.

Dec. 16, 1914.

Appendix C.

Relating to the Care of Shade Trees on State Highways.

Report of Mr. F. W. Rane, State Forester.

Dec. 29, 1914.

Massachusetts Highway Commission, 15 Ashburton Place, Boston, Mass.

Gentlemen: — In response to your request for a report of the work done on the State highways this year, under direction of this department, in suppressing insect pests, I wish to say that work has been done both in cleaning and spraying for suppressing gypsy moths and brown-tail moths, and also the elm leaf beetle. I send inclosed a list of the towns in which the work has been done, and the amount expended in each town.

Respectfully submitted,

F. W. RANE,
State Forester.

List of Highway Work, 1914.

Abington,	$20 34	Grafton,	$83 75
Acton,	156 63	Greenfield,	27 00
Amesbury,	114 51	Groton,	37 29
Amherst,	41 63	Groveland,	59 26
Andover,	87 33	Hadley,	71 38
Ashburnham,	73 75	Hamilton,	106 33
Ashland,	32 58	Hardwick,	28 84
Ashby,	53 50	Harvard,	46 81
Athol,	34 40	Harwich,	4 50
Attleborough,	16 50	Haverhill,	132 45
Auburn,	27 58	Hingham,	27 63
Ayer,	33 76	Holbrook,	14 00
Barnstable,	358 00	Holliston,	63 02
Barre,	58 00	Hudson,	44 46
Bedford,	89 45	Huntington,	104 56
Bellingham,	12 70	Ipswich,	44 50
Beverly,	290 79	Lakeville,	9 75
Billerica,	69 25	Lancaster,	55 10
Bourne,	157 06	Leicester,	29 00
Boxborough,	128 65	Leominster,	64 00
Braintree,	22 38	Lexington,	94 45
Brewster,	36 00	Lincoln,	65 35
Bridgewater,	26 57	Littleton,	72 80
Brookfield,	76 95	Lowell,	42 68
Burlington,	99 75	Lunenburg,	71 40
Canton,	11 70	Marion,	18 00
Chatham,	18 25	Marlborough,	228 65
Chelmsford,	105 10	Marshfield,	42 86
Chester,	112 88	Mashpee,	5 50
Cohasset,	40 41	Melrose,	33 00
Concord,	231 04	Merrimac,	41 97
Deerfield,	12 25	Methuen,	85 35
Dennis,	18 00	Middleborough,	13 44
Dover,	40 65	Middleton,	14 75
Dracut,	68 40	Montague,	20 05
Duxbury,	30 94	Natick,	59 41
Essex,	27 51	Needham,	38 36
Falmouth,	121 80	Newbury,	88 53
Fitchburg,	65 76	Newburyport,	38 00
Foxborough,	94 93	North Andover,	177 45
Framingham,	104 40	North Attleborough,	58 05
Franklin,	37 50	North Reading,	54 50
Gardner,	13 20	Northborough,	105 30
Gloucester,	21 00	Northbridge,	19 83

Northfield,	$72	50	
Norton,	40	67	
Orleans,	35	60	
Palmer,	44	19	
Pembroke,	5	11	
Pepperell,	68	47	
Pittsfield,	64	00	
Plainville,	25	15	
Princeton,	14	00	
Quincy,	29	97	
Reading,	120	25	
Rehoboth,	47	20	
Rockland,	29	69	
Rockport,	13	00	
Rowley,	101	17	
Russell,	61	45	
Salisbury,	95	88	
Sandwich,	38	00	
Scituate,	150	20	
Seekonk,	50	00	
Shrewsbury,	117	80	
Somerset,	150	00	
South Hadley,	77	00	
Southborough,	60	96	
Spencer,	21	05	
Sterling,	100	50	
Stoneham,	88	30	
Stoughton,	21	25	
Sudbury,	219	30	
Sutton,	12	31	
Swampscott,	4	00	
Swansea,	$126	25	
Taunton,	23	75	
Templeton,	73	30	
Tewksbury,	78	39	
Townsend,	125	00	
Truro,	10	50	
Tyngsborough,	169	08	
Ware,	53	50	
Warren,	44	54	
Wayland,	102	83	
Wellfleet,	44	50	
Wenham,	94	25	
West Boylston,	51	11	
West Bridgewater,	28	11	
West Brookfield,	44	54	
West Newbury,	115	62	
Westborough,	39	27	
Westfield,	118	85	
Westford,	184	00	
Westminster,	19	35	
Weston,	96	00	
Westwood,	12	25	
Weymouth,	130	50	
Whitman,	19	95	
Wilmington,	66	74	
Winchester,	67	25	
Woburn,	206	19	
Worcester,	29	54	
Yarmouth,	47	20	
	$10,038	42	

Appendix D.

Road Statistics, Miles, 1914 (by Cities and Towns).

Town or City.	Unimproved Roads.	Improved Roads.	Dirt.	Gravel.	Plain Macadam.	Bituminous Macadam.	Macadam, Oil-tar Coat.	Pavement.	Total.
Barnstable County.									
Barnstable,	50.00	140.00	132.00	4.00	30.00	–	24.00	–	190.00
Bourne,	22.00	84.50	72.00	25.00	2.00	–	7.50	–	106.50
Brewster,	32.00	25.00	30.00	7.00	12.00	–	8.00	–	57.00
Chatham,	12.00	38.00	41.50	–	1.50	4.00	3.00	–	50.00
Dennis,	14.00	51.00	47.50	–	1.00	2.50	14.00	–	65.00
Eastham,	6.00	39.00	38.50	–	–	–	6.50	–	45.00
Falmouth,	–	160.00	28.00	94.00	–	6.00	32.00	–	160.00
Harwich,	51.00	29.00	64.00	–	3.50	4.50	8.00	–	80.00
Mashpee,	6.00	49.00	50.50	4.50	–	–	–	–	55.00
Orleans,	17.00	16.00	23.00	–	–	–	10.00	–	33.00
Provincetown,	–	12.00	6.00	–	3.00	–	3.00	–	12.00
Sandwich,	10.00	70.00	59.50	15.00	–	2.50	3.00	–	80.00
Truro,	15.00	55.00	55.00	8.00	–	–	7.00	–	70.00
Wellfleet,	20.00	22.50	28.00	5.00	1.50	8.00	–	–	42.50
Yarmouth,	30.00	39.00	50.00	–	1.00	–	18.00	–	69.00
	285.00	830.00	725.50	162.50	55.50	27.50	144.00	–	1,115.00
Berkshire County.									
Adams,	–	52.21	29.48	18.18	–	.23	3.43	.89	52.21
Alford,	19.00	2.00	11.00	10.00	–	–	–	–	21.00
Becket,	20.00	61.00	72.00	–	–	–	9.00	–	81.00
Cheshire,	61.50	6.50	62.30	1.20	–	3.00	1.50	–	68.00
Clarksburg,	3.00	12.00	8.80	5.00	–	–	1.20	–	15.00
Dalton,	20.00	15.00	17.50	10.00	3.50	1.50	2.50	–	35.00
Egremont,	30.00	6.00	20.00	16.00	–	–	–	–	36.00
Florida,	40.00	11.50	40.00	11.50	–	–	–	–	51.50
Great Barrington,	28.00	54.00	25.25	51.12	2.00	–	2.75	.88	82.00
Hancock,	5.00	20.50	5.00	17.50	–	–	3.00	–	25.50
Hinsdale,	30.00	3.50	31.00	1.00	1.50	–	–	–	33.50
Lanesborough,	14.00	39.00	44.50	6.00	–	–	2.50	–	53.00

Lee,	–	61.00	24.60	26.80	5.50	–	4.10	–	61.00
Lenox,	6.00	49.75	22.00	16.00	–	5.25	12.50	–	55.75
Monterey,	10.00	38.00	44.00	4.00	–	–	–	–	48.00
Mount Washington,	2.00	19.00	20.00	1.00	–	–	–	–	21.00
New Ashford,	3.00	10.00	10.00	3.00	–	–	–	–	13.00
New Marlborough,	7.00	95.00	92.00	10.00	–	–	–	–	102.00
North Adams,	5.96	61.45	14.20	44.67	1.00	–	4.54	3.00	67.41
Otis,	53.00	7.00	56.50	3.50	–	–	–	–	60.00
Peru,	42.00	3.00	45.00	–	–	–	–	–	45.00
Pittsfield,	7.00	146.50	52.00	86.00	–	3.00	9.00	3.50	153.50
Richmond,	10.00	53.00	50.00	10.00	3.00	–	–	–	63.00
Sandisfield,	96.00	4.00	96.00	–	4.00	–	–	–	100.00
Savoy,	6.00	57.25	61.00	2.25	–	–	–	–	63.25
Sheffield,	79.00	21.00	66.00	31.00	–	–	3.00	–	100.00
Stockbridge,	–	44.20	–	33.20	10.00	1.00	–	–	44.20
Tyringham,	19.00	10.00	19.00	9.00	1.00	–	–	–	29.00
Washington,	48.00	3.00	49.00	2.00	–	–	–	–	51.00
West Stockbridge,	10.00	35.00	20.00	23.00	2.00	–	–	–	45.00
Williamstown,	21.00	46.00	48.00	15.40	–	1.00	2.00	.60	67.00
Windsor,	76.50	6.25	76.50	1.25	5.00	–	–	–	82.75
	771.96	1,053.61	1,232.63	469.57	38.50	14.98	61.02	8.87	1,825.57
Bristol County.									
Acushnet,	–	31.25	13.50	–	14.35	–	3.40	–	31.25
Attleboro,	–	90.00	–	34.00	24.75	–	31.00	.25	90.00
Berkley,	–	49.00	4.00	44.00	–	1.00	–	–	49.00
Dartmouth,	2.50	110.25	63.00	3.00	42.00	4.75	–	–	112.75
Dighton,	–	45.00	36.00	–	–	9.00	–	–	45.00
Easton,	–	63.00	2.00	39.00	17.20	–	.80	4.00	63.00
Fairhaven,	10.00	28.00	18.00	10.00	8.00	.50	1.00	.50	38.00
Fall River,	9.72	139.00	34.22	55.65	40.00	.80	–	18.05	148.72
Freetown,	8.00	59.00	8.00	46.50	8.50	–	4.00	–	67.00
Mansfield,	11.00	54.00	28.00	33.00	1.50	–	2.50	–	65.00
New Bedford,	20.00	125.00	–	16.16	101.11	–	–	27.73	145.00
North Attleborough,	20.00	71.70	49.05	15.00	15.00	2.00	10.00	.65	91.70
Norton,	.75	64.25	1.25	56.75	–	–	7.00	–	65.00
Raynham,	5.00	45.00	5.00	40.50	1.50	2.50	.50	–	50.00
Rehoboth,	20.00	87.50	20.00	78.50	2.50	–	6.50	–	107.50
Seekonk,	3.50	48.50	8.50	32.00	6.00	–	5.50	–	52.00
Somerset,	–	27.00	–	16.50	10.00	.50	–	–	27.00
Swansea,	1.00	48.50	10.00	28.25	1.50	–	9.75	–	49.50
Taunton,	2.00	147.00	40.00	65.00	28.00	9.50	1.00	5.50	149.00
Westport,	7.25	102.75	59.00	16.00	35.00	–	–	–	110.00
	120.72	1,435.70	399.52	629.81	356.91	30.55	82.95	56.68	1,556.42

ROAD STATISTICS, MILES, 1914 (BY CITIES AND TOWNS) — *Continued.*

TOWN OR CITY.	Unimproved Roads.	Improved Roads.	Dirt.	Gravel.	Plain Macadam.	Bituminous Macadam.	Macadam, Oil-tar Coat.	Pavement.	Total.
Dukes County.									
Chilmark,	12.00	22.50	26.50	–	–	–	8.00	–	34.50
Edgartown,	20.00	10.25	22.00	1.50	3.25	–	2.50	1.00	30.25
Gay Head,	–	3.25	2.75	–	–	–	.50	–	3.25
Gosnold,	–	1.00	–	1.00	–	–	–	–	1.00
Oak Bluffs,	5.00	26.00	8.00	–	–	–	3.00	20.00	31.00
Tisbury,	–	14.10	4.00	3.00	2.10	–	5.00	–	14.10
West Tisbury,	10.00	39.00	40.00	–	5.50	–	3.50	–	49.00
	47.00	116.10	103.25	5.50	10.85	–	22.50	21.00	163.10
Essex County.									
Amesbury,	–	70.40	42.00	18.00	7.50	–	2.50	.40	70.40
Andover,	2.00	86.00	2.00	80.00	1.75	1.50	2.75	–	88.00
Beverly,	–	72.90	.77	48.73	17.45	2.75	2.00	1.20	72.90
Boxford,	–	50.00	30.00	20.00	–	–	–	–	50.00
Danvers,	3.00	87.00	8.00	76.00	5.00	1.00	–	–	90.00
Essex,	1.00	21.30	3.00	17.80	–	–	1.50	–	22.30
Georgetown,	7.00	25.00	6.25	24.00	1.00	.75	–	–	32.00
Gloucester,	20.00	99.00	20.00	70.00	10.00	–	15.00	4.00	119.00
Groveland,	1.50	28.50	1.50	22.40	–	2.60	3.50	–	30.00
Hamilton,	4.00	34.00	4.00	29.00	–	–	5.00	–	38.00
Haverhill,	7.00	139.00	83.00	7.00	15.00	28.00	6.00	7.00	146.00
Ipswich,	6.00	54.00	6.00	48.00	–	–	6.00	–	60.00
Lawrence,	11.00	97.00	11.00	58.67	6.00	.33	13.00	19.00	108.00
Lynn,	–	130.00	87.00	10.50	–	–	20.00	12.50	130.00
Lynnfield,	–	20.00	5.00	15.00	–	–	–	–	20.00
Manchester,	–	17.50	–	7.50	–	–	10.00	–	17.50
Marblehead,	24.00	10.00	24.00	2.50	1.50	–	6.00	–	34.00
Merrimac,	1.50	33.50	11.50	21.00	–	–	2.50	–	35.00
Methuen,	10.00	80.00	10.00	26.00	14.00	10.00	30.00	–	90.00
Middleton,	17.00	14.00	–	28.00	–	–	3.00	–	31.00
Nahant,	–	11.00	2.00	3.00	2.75	2.25	1.00	–	11.00
Newbury,	5.00	38.00	10.75	28.00	–	–	4.25	–	43.00
Newburyport,	6.00	62.00	18.00	35.00	11.00	2.00	1.00	1.00	68.00
North Andover,	20.00	80.00	20.00	51.90	15.00	1.00	9.00	3.10	100.00
Peabody,	4.00	50.00	3.25	42.50	7.00	.75	–	.50	54.00

Rockport,	12.00	15.00	12.50	4.38	7.00	.12	3.00	–	27.00
Rowley,	5.00	35.00	17.00	19.36	–	–	3.64	–	40.00
Salem,	–	62.30	8.56	23.19	21.49	–	3.40	5.66	62.30
Salisbury,	4.00	31.00	4.00	26.50	–	.50	4.00	–	35.00
Saugus,	30.00	51.00	27.75	50.00	.75	1.60	.90	–	81.00
Swampscott,	5.50	23.00	8.00	9.00	7.00	.50	3.00	1.00	28.50
Topsfield,	–	41.00	31.00	10.00	–	–	–	–	41.00
Wenham,	–	20.00	–	17.00	–	1.00	2.00	–	20.00
West Newbury,	–	44.00	–	38.00	.50	–	5.50	–	44.00
	206.50	1,732.40	517.83	987.93	151.69	56.65	169.44	55.36	1,938.90
Franklin County.									
Ashfield,	9.00	77.00	82.00	4.00	–	–	–	–	86.00
Bernardston,	7.00	52.50	7.00	52.50	–	–	–	–	59.50
Buckland,	5.00	40.00	30.67	10.00	4.33	–	–	–	45.00
Charlemont,	40.00	15.00	39.00	14.60	–	–	1.40	–	55.00
Colrain,	7.00	79.00	74.00	10.00	–	–	2.00	–	86.00
Conway,	3.00	87.00	87.00	2.90	–	–	–	.10	90.00
Deerfield,	–	68.00	40.00	20.00	–	–	8.00	–	68.00
Erving,	–	28.17	17.88	–	.17	2.00	8.12	–	28.17
Gill,	7.00	27.00	31.00	3.00	–	–	–	–	34.00
Greenfield,	–	64.32	34.18	8.73	–	7.84	13.39	.18	64.32
Hawley,	45.00	10.00	51.50	3.50	–	–	–	–	55.00
Heath,	21.50	33.50	51.50	3.50	–	–	–	–	55.00
Leverett,	4.00	36.00	36.00	4.00	–	–	–	–	40.00
Leyden,	6.00	26.00	28.50	3.50	–	–	–	–	32.00
Monroe,	20.00	4.00	20.00	4.00	–	–	–	–	24.00
Montague,	–	95.00	41.00	40.00	8.25	–	5.75	–	95.00
New Salem,	40.00	40.00	75.33	4.67	–	–	–	–	80.00
Northfield,	25.00	50.00	20.75	48.50	1.50	–	4.25	–	75.00
Orange,	–	80.00	65.25	8.75	1.00	–	5.00	–	80.00
Rowe,	15.00	33.00	45.50	2.50	–	–	–	–	48.00
Shelburne,	7.31	40.00	25.00	20.00	1.10	–	1.21	–	47.31
Shutesbury,	43.00	7.00	47.00	3.00	–	–	–	–	50.00
Sunderland,	–	38.75	26.25	6.00	4.50	–	2.00	–	38.75
Warwick,	15.00	55.00	65.00	5.00	–	–	–	–	70.00
Wendell,	30.00	28.00	54.00	4.00	–	–	–	–	58.00
Whately,	22.00	21.00	30.00	5.00	4.00	–	4.00	–	43.00
	371.81	1,135.24	1,125.31	291.65	24.85	9.84	55.12	.28	1,507.05

Road Statistics, Miles, 1914 (by Cities and Towns) — *Continued.*

Town or City.	Unimproved Roads.	Improved Roads.	Dirt.	Gravel.	Plain Macadam.	Bituminous Macadam.	Macadam, Oil-tar Coat.	Pavement.	Total.
Hampden County.									
Agawam,	–	57.50	20.00	26.00	–	4.00	7.50	–	57.50
Blandford,	49.00	49.00	93.50	–	–	–	4.50	–	98.00
Brimfield,	1.00	65.00	58.00	4.00	4.00	–	–	–	66.00
Chester,	20.00	60.00	70.00	3.00	–	.12	6.88	–	80.00
Chicopee,	40.00	39.80	40.00	26.90	9.05	3.20	–	.65	79.80
East Longmeadow,	–	39.50	31.00	4.00	4.50	–	–	–	39.50
Granville,	5.00	75.00	75.00	5.00	–	–	–	–	80.00
Hampden,	3.00	29.00	20.00	12.00	–	–	–	–	32.00
Holland,	27.00	3.00	30.00	–	–	–	–	–	30.00
Holyoke,	–	120.40	–	85.39	16.38	4.06	–	14.57	120.40
Longmeadow,	19.50	15.00	19.50	11.25	.45	.05	2.15	1.10	34.50
Ludlow,	8.00	62.00	67.80	2.00	.20	–	–	–	70.00
Monson,	20.00	107.50	120.00	1.00	5.00	–	1.50	–	127.50
Montgomery,	5.00	25.00	22.00	8.00	–	–	–	–	30.00
Palmer,	2.00	93.00	69.00	20.00	3.50	–	2.25	.25	95.00
Russell,	4.00	23.00	13.34	11.00	–	1.66	1.00	–	27.00
Southwick,	–	60.00	49.00	11.00	–	–	–	–	60.00
Springfield,	16.00	151.00	16.60	53.50	68.50	11.60	–	16.80	167.00
Tolland,	7.00	34.00	33.00	7.00	1.00	–	–	–	41.00
Wales,	6.00	23.00	24.00	5.00	–	–	–	–	29.00
West Springfield,	–	97.00	40.00	20.00	5.00	15.00	15.00	2.00	97.00
Westfield,	20.00	82.00	62.00	24.80	9.37	1.37	4.46	–	102.00
Wilbraham,	11.00	36.00	37.00	5.00	–	–	5.00	–	47.00
	263.50	1,346.70	1,010.74	345.84	126.95	41.06	50.24	35.37	1,610.20
Hampshire County.									
Amherst,	6.00	69.00	6.00	62.75	3.50	1.00	1.75	–	75.00
Belchertown,	50.00	90.00	133.75	3.00	3.25	–	–	–	140.00
Chesterfield,	53.00	3.00	53.00	3.00	–	–	–	–	56.00
Cummington,	–	60.00	55.00	5.00	–	–	–	–	60.00
Easthampton,	–	56.00	44.50	.40	8.00	.70	2.40	–	56.00
Enfield,	20.00	20.00	34.50	5.50	–	–	–	–	40.00
Goshen,	6.00	26.00	27.50	2.00	–	–	2.50	–	32.00
Granby,	1.00	54.25	49.50	–	5.75	–	–	–	55.25
Greenwich,	40.50	1.50	40.50	1.50	–	–	–	–	42.00
Hadley,	2.00	60.00	51.50	3.00	2.50	–	5.00	–	62.00

Hatfield,	18.00	38.50	42.00	4.50	6.00	–	4.00	–	56.50
Huntington,	40.00	10.00	37.50	10.00	–	–	2.50	–	50.00
Middlefield,	10.00	25.00	30.00	5.00	–	–	–	–	35.00
Northampton,	40.00	140.25	40.00	118.00	20.00	2.00	–	.25	180.25
Pelham,	7.00	31.00	35.50	2.50	–	–	–	–	38.00
Plainfield,	6.50	36.00	40.50	2.00	–	–	–	–	42.50
Prescott,	10.00	34.00	40.00	4.00	–	–	–	–	44.00
South Hadley,	–	50.00	8.50	27.00	7.00	.50	7.00	–	50.00
Southampton,	10.00	65.00	71.50	2.75	.75	–	–	–	75.00
Ware,	6.00	86.00	45.00	40.00	5.80	–	1.00	.20	92.00
Westhampton,	9.00	40.00	44.00	5.00	–	–	–	–	49.00
Williamsburg,	23.00	20.00	36.00	3.00	4.00	–	–	–	43.00
Worthington,	23.00	52.00	73.00	2.00	–	–	–	–	75.00
	331.00	1,067.50	1,039.25	311.90	66.55	4.20	26.15	.45	1,448.50
Middlesex County.									
Acton,	1.00	75.00	46.00	20.00	5.00	–	5.00	–	76.00
Arlington,	8.00	61.50	23.40	23.40	13.60	4.50	4.50	.10	69.50
Ashby,	10.00	60.00	64.91	–	1.53	–	3.56	–	70.00
Ashland,	1.00	45.25	–	43.00	.50	–	2.75	–	46.25
Ayer,	10.00	20.00	20.00	9.00	–	.50	.50	–	30.00
Bedford,	4.50	25.20	8.40	11.70	9.00	–	.60	–	29.70
Belmont,	1.20	29.00	1.20	18.70	5.80	.50	4.00	–	30.20
Billerica,	23.33	42.67	23.33	37.67	3.00	–	2.00	–	66.00
Boxborough,	5.00	24.25	12.00	14.00	2.00	–	1.25	–	29.25
Burlington,	5.00	36.25	5.00	28.50	2.75	–	5.00	–	41.25
Cambridge,	–	103.98	–	–	73.32	7.87	–	22.79	103.98
Carlisle,	30.00	30.00	42.00	18.00	–	–	–	–	60.00
Chelmsford,	–	92.00	–	88.25	–	–	3.75	–	92.00
Concord,	10.00	77.83	15.00	60.00	–	6.50	6.00	.33	87.83
Dracut,	3.00	62.00	25.00	31.50	4.00	4.50	–	–	65.00
Dunstable,	9.00	26.00	21.00	14.00	–	–	–	–	35.00
Everett,	–	49.22	–	10.67	29.67	–	6.10	2.78	49.22
Framingham,	13.00	87.00	43.00	50.00	–	.12	6.88	–	100.00
Groton,	7.00	64.00	6.50	60.00	3.00	–	1.50	–	71.00
Holliston,	5.00	49.00	40.00	9.00	–	–	5.00	–	54.00
Hopkinton,	10.00	59.00	34.00	33.00	2.00	–	–	–	69.00
Hudson,	10.00	33.00	10.00	30.00	1.00	.86	1.14	–	43.00
Lexington,	15.00	65.00	5.00	45.00	18.00	2.00	10.00	–	80.00
Lincoln,	5.00	38.00	15.00	20.00	5.00	–	3.00	–	43.00
Littleton,	–	46.00	–	40.00	1.25	–	4.75	–	46.00
Lowell,	60.00	80.97	78.34	–	36.50	1.60	1.60	22.93	140.97
Malden,	25.00	64.76	25.00	42.76	18.00	2.00	–	2.00	89.76
Marlborough,	15.00	70.00	30.00	35.00	8.00	5.00	6.25	.75	85.00

ROAD STATISTICS, MILES, 1914 (BY CITIES AND TOWNS) — *Continued.*

TOWN OR CITY.	Unimproved Roads.	Improved Roads.	Dirt.	Gravel.	Plain Macadam.	Bituminous Macadam.	Macadam, Oil-tar Coat.	Pavement.	Total.
Middlesex County — Con.									
Maynard,	5.00	20.00	6.00	14.00	–	–	5.00	–	25.00
Medford,	.50	52.50	–	30.00	18.43	2.99	.82	.76	53.00
Melrose,	11.50	48.50	11.00	13.50	29.90	4.30	.60	.70	60.00
Natick,	–	102.00	8.00	86.00	4.75	–	3.25	–	102.00
Newton,	78.00	144.00	64.00	67.00	7.00	29.00	55.00	–	222.00
North Reading,	3.00	33.25	10.00	15.00	–	–	11.25	–	36.25
Pepperell,	–	75.00	67.75	4.00	1.25	–	2.00	–	75.00
Reading,	3.00	45.00	14.50	21.00	3.00	2.50	7.00	–	48.00
Sherborn,	–	50.00	7.00	43.00	–	–	–	–	50.00
Shirley,	8.00	34.00	36.50	4.36	1.14	–	–	–	42.00
Somerville,	22.05	77.01	10.00	10.00	52.24	16.65	–	10.17	99.06
Stoneham,	–	37.50	16.50	17.00	.90	1.15	1.95	–	37.50
Stow,	2.00	43.00	20.00	25.00	–	–	–	–	45.00
Sudbury,	–	60.00	15.00	40.00	–	–	5.00	–	60.00
Tewksbury,	8.00	57.00	5.00	51.00	1.00	6.00	2.00	–	65.00
Townsend,	8.00	72.00	66.00	8.00	–	–	6.00	–	80.00
Tyngsborough,	11.00	30.00	22.00	12.00	7.00	–	–	–	41.00
Wakefield,	–	48.00	–	34.00	9.20	2.10	2.40	.30	48.00
Waltham,	5.81	58.60	5.81	19.89	30.30	.81	6.62	.98	64.41
Watertown,	–	56.25	–	20.10	18.50	1.50	16.00	.15	56.25
Wayland,	5.00	47.00	13.50	36.00	–	2.50	–	–	52.00
Westford,	–	90.00	–	90.00	–	–	–	–	90.00
Weston,	–	49.00	–	39.25	2.00	2.00	5.75	–	49.00
Wilmington,	–	52.50	–	48.00	–	–	4.50	–	52.50
Winchester,	4.50	38.50	4.50	12.90	–	2.20	23.40	–	43.00
Woburn,	1.05	67.09	1.05	56.34	7.40	1.35	2.00	–	68.14
	462.44	3,004.58	998.19	1,610.49	436.93.	111.00	245.67	64.74	3,467.02
Nantucket County.									
Nantucket,	77.50	36.50	106.50	–	–	–	7.50	–	114.00
Norfolk County.									
Avon,	1.00	9.00	1.00	8.00	.50	–	.50	–	10.00
Bellingham,	–	44.00	30.75	9.25	.82	–	3.18	–	44.00
Braintree,	–	50.00	–	32.50	–	–	17.50	–	50.00

Brookline,	–	71.09	–	10.05	13.35	6.71	39.72	1.26	71.09
Canton,	–	40.00	–	36.75	–	–	3.25	–	40.00
Cohasset,	–	26.11	–	14.46	–	11.65	–	–	26.11
Dedham,	–	55.50	2.00	26.00	20.00	2.00	5.00	.50	55.50
Dover,	–	38.19	–	36.00	–	–	2.19	–	38.19
Foxborough,	–	52.00	–	45.00	3.50	–	3.50	–	52.00
Franklin,	15.00	61.00	58.23	11.00	1.00	2.00	3.77	–	76.00
Holbrook,	–	20.00	–	18.25	–	–	1.75	–	20.00
Medfield,	4.00	36.00	4.00	36.00	–	–	–	–	40.00
Medway,	–	40.00	–	37.00	–	–	3.00	–	40.00
Millis,	17.00	17.00	10.00	24.00	–	–	–	–	34.00
Milton,	–	55.00	–	24.00	15.00	1.00	15.00	–	55.00
Needham,	2.00	43.00	2.00	26.00	–	1.00	16.00	–	45.00
Norfolk,	–	46.45	35.00	10.00	–	1.45	–	–	46.45
Norwood,	–	40.00	1.50	32.00	2.50	–	4.00	–	40.00
Plainville,	5.00	30.00	32.60	–	.10	–	2.30	–	35.00
Quiney,	77.00	88.00	77.00	40.00	10.50	9.00	20.50	8.00	165.00
Randolph,	3.00	27.75	3.00	25.00	.25	–	2.50	–	30.75
Sharon,	10.00	58.67	38.00	30.00	.67	–	–	–	68.67
Stoughton,	1.00	55.50	41.00	10.00	–	1.00	4.50	–	56.50
Walpole,	–	65.00	–	60.00	–	5.00	–	–	65.00
Wellesley,	–	55.00	5.00	30.00	10.00	–	10.00	–	55.00
Westwood,	3.00	29.00	3.00	27.00	–	–	2.00	–	32.00
Weymouth,	–	75.00	–	64.00	3.00	1.00	7.00	–	75.00
Wrentham,	3.00	60.00	57.00	–	–	–	6.00	–	63.00
	141.00	1,288.26	401.08	722.26	81.19	41.81	173.16	9.76	1,429.26
Plymouth County.									
Abington,	–	58.00	13.00	40.00	–	–	5.00	–	58.00
Bridgewater,	–	70.00	15.75	42.00	5.00	1.25	5.00	–	70.00
Brockton,	3.66	120.00	41.69	41.68	30.41	–	–	9.88	123.66
Carver,	20.00	47.00	30.00	24.00	13.00	–	–	–	67.00
Duxbury,	–	90.00	23.50	60.00	–	–	6.50	–	90.00
East Bridgewater,	–	49.50	–	44.50	5.00	–	–	–	49.50
Halifax,	–	32.25	15.00	15.00	2.25	–	–	–	32.25
Hanover,	–	45.00	21.00	21.00	3.00	–	–	–	45.00
Hanson,	–	34.00	–	26.00	8.00	–	–	–	34.00
Hingham,	8.25	75.75	22.25	52.04	1.00	1.45	7.26	–	84.00
Hull,	–	25.70	1.00	20.50	–	4.20	–	–	25.70
Kingston,	3.00	37.00	27.00	8.00	–	–	5.00	–	40.00
Lakeville,	–	65.00	46.75	5.00	2.50	1.25	9.50	–	65.00
Marion,	.75	24.63	4.00	.75	10.25	–	10.38	–	25.38
Marshfield,	15.00	62.00	36.50	30.00	1.50	–	9.00	–	77.00
Mattapoisett,	–	33.00	–	27.25	3.25	–	2.50	–	33.00

ROAD STATISTICS, MILES, 1914 (BY CITIES AND TOWNS) — *Continued.*

TOWN OR CITY.	Unimproved Roads.	Improved Roads.	Dirt.	Gravel.	Plain Macadam.	Bituminous Macadam.	Macadam, Oil-tar Coat.	Pavement.	Total.
Plymouth County — Con.									
Middleborough,	51.00	145.00	105.00	78.60	4.00	.40	8.00	–	196.00
Norwell,	1.00	49 60	45 60	4.67	–	.33	–	–	50.60
Pembroke,	5.00	52.00	10.50	44.50	1.50	–	.50	–	57.00
Plymouth,	110.00	98.00	155.00	40.47	3.51	3.00	6.02	–	208.00
Plympton,	4.00	30.00	19.00	15.00	–	–	–	–	34.00
Rochester,	40.00	45 00	70.00	2.00	8.00	–	5.00	–	85.00
Rockland,	3.00	33.50	3.00	25.65	4.75	.75	2.35	–	36.50
Scituate,	–	56.00	–	43.00	–	1.50	11.50	–	56.00
Wareham,	65.50	69.50	85.50	25.00	6.00	2.00	16.00	.50	135.00
West Bridgewater,	–	44.00	–	40.00	–	–	4.00	–	44.00
Whitman,	1.50	33.25	3.50	23.25	3.00	.75	4.25	–	34.75
	331.66	1,524.68	794.54	799.86	115.92	16.88	117.76	11.38	1,856.34
Suffolk County.									
Boston,	2.76	568.00	2.76	37.43	345.77	42.55	–	142.25	570.76
Chelsea,	–	41.00	9.50	11.00	10.30	3.60	–	6.60	41.00
Revere,	30.00	23.00	25.00	15.00	10.00	1.00	–	2.00	53.00
Winthrop,	–	26.00	–	19.00	.80	3.30	2.90	–	26.00
	32.76	658.00	37.26	82.43	366.87	50.45	2.90	150.85	690.76
Worcester County.									
Ashburnham,	25.00	100.00	125.00	–	–	–	–	–	125.00
Athol,	–	86.00	77.62	3.00	–	1.50	3.10	.78	86.00
Auburn,	–	47.00	42.00	–	–	–	5.00	–	47.00
Barre,	25.00	97.00	100.00	5.00	14.00	–	3.00	–	122.00
Berlin,	13.50	23.50	13.50	23.50	–	–	–	–	37.00
Blackstone,	19.00	33.00	–	48 27	–	1.15	2.58	–	52.00
Bolton,	–	55.00	–	55.00	–	–	–	–	55.00
Boylston,	5.00	26.50	22.00	5.00	4.50	–	–	–	31.50
Brookfield,	–	60.50	54.00	–	.50	–	6.00	–	60.50
Charlton,	13.00	117.00	120.75	.25	1.10	–	7.90	–	130.00
Clinton,	–	35.28	3.00	18.10	12.60	1.58	–	–	35.28
Dana,	30.00	20.00	46 50	3.50	–	–	–	–	50.00
Douglas,	–	75.00	68.00	.60	4.20	–	2.20	–	75.00
Dudley,	5.00	60.00	57.50	4.75	.50	–	2.25	–	65.00
Fitchburg,	–	138.31	–	113.88	–	–	16.97	7.46	138.31
Gardner,	3.00	72.00	3.50	65.90	2.00	2.00	1.50	.10	75.00

Grafton,	11.00	62.00	56.82	8.50	2.50	3.14	2.04	–	73.00
Hardwick,	80.00	5.82	80.00	5.00	–	–	–	.82	85.82
Harvard,	26.00	40.00	58.00	2.00	3.00	–	3.00	–	66.00
Holden,	81.00	6.00	81.00	.50	5.50	–	–	–	87.00
Hopedale,	–	16.60	1.50	9.03	3.46	.80	1.81	–	16.60
Hubbardston,	10.00	70.00	75 00	5.00	–	–	–	–	80.00
Lancaster,	15.00	55.00	8.00	58.75	2.00	–	1.25	–	70.00
Leicester,	–	68.50	31 00	32.00	5.50	–	–	–	68.50
Leominster,	10.00	89.44	32.19	48.00	10.00	.13	9.00	.12	99.44
Lunenburg,	10.00	70.00	12.00	62.00	–	1.90	4.10	–	80.00
Mendon,	19.00	25.00	39.00	5.00	–	–	–	–	44.00
Milford,	–	80 00	38.00	30.00	4.00	–	8.00	–	80.00
Millbury,	2.00	48.00	43.85	–	1.40	1.00	3.60	.15	50.00
New Braintree,	–	55.00	53.75	.75	.50	–	–	–	55.00
North Brookfield,	–	67.00	62.00	–	5.00	–	–	–	67.00
Northborough,	25.00	30.00	25.00	25.00	–	1.00	4.00	–	55.00
Northbridge,	10.00	33.00	10.00	30.00	–	3.00	–	–	43.00
Oakham,	30.00	20.00	40.00	10.00	–	–	–	–	50.00
Oxford,	9.00	66.00	55.75	15.00	–	–	4.25	–	75.00
Paxton,	3.50	33.50	31.50	2.00	–	–	3.50	–	37.00
Petersham,	44.50	25.50	65.50	4.50	–	–	–	–	70.00
Phillipston,	10 00	36.00	36.00	4.50	–	2.75	2.75	–	46.00
Princeton,	3.50	73.50	68.50	5.00	3.50	–	–	–	77.00
Royalston,	84.50	1.25	84.50	1.25	–	–	–	–	85.75
Rutland,	33.00	52.00	81.88	2.00	–	1.12	–	–	85.00
Shrewsbury,	5.00	57.00	39.00	18.00	–	–	5.00	–	62.00
Southborough,	–	60.00	1.00	52.31	3.00	–	3.69	–	60.00
Southbridge,	3.00	66.50	62.50	3.00	1.00	1.50	–	1.50	69.50
Spencer,	7.00	85.00	84.40	–	1.60	–	5.40	.60	92.00
Sterling,	–	81.00	70.65	2.00	–	.35	8.00	–	81.00
Sturbridge,	15.00	75.00	15.00	71.00	–	–	4.00	–	90.00
Sutton,	–	92.00	60.75	27.50	1.50	–	2.25	–	92.00
Templeton,	2.50	86.00	70.00	10.00	2.00	6.50	–	–	88.50
Upton,	5.00	59.00	14.00	50.00	–	–	–	–	64.00
Uxbridge,	8.00	73.00	73.25	2.00	1.00	1.50	3.25	–	81.00
Warren,	6.00	66.00	44.00	20.00	–	–	8.00	–	72.00
Webster,	–	36.13	11.00	11.00	3.50	10.50	–	.13	36.13
West Boylston,	–	42.00	4.00	30.00	5.00	–	3.00	–	42.00
West Brookfield,	6.00	49.00	49.00	2.00	–	–	4.00	–	55.00
Westborough,	–	65.00	2.50	61.25	1.00	.25	–	–	65.00
Westminster,	6.00	88.00	6.00	82.73	–	–	5.25	–	94.00
Winchendon,	27.00	93.00	46.30	72.00	1.70	–	–	–	120.00
Worcester,	19.17	194.72	19.17	82.10	76.38	.42	12.28	23.54	213.89
	765.17	3.543.55	2,576.63	1,309.44	183.44	42.09	161.92	35.20	4,308.72

Road Statistics, Miles, 1914 (by Cities).

City.	Unimproved Roads.	Improved Roads.	Dirt.	Gravel.	Plain Macadam.	Bituminous Macadam.	Macadam, Oil-tar Coat.	Pavement.	Total.
Attleboro,	–	90.00	–	34.00	24.75	–	31.00	.25	90.00
Beverly,	–	72.90	.77	48.73	17.45	2.75	2.00	1.20	72.90
Boston,	2.76	563.00	2.76	37.43	345.77	42.55	–	142.25	570.76
Brockton,	3.66	120.00	41.69	41.68	30.41	–	–	9.88	123.66
Cambridge,	–	103.98	–	–	73.32	7.87	–	22.79	103.98
Chelsea,	–	41.00	9.50	11.00	10.30	3.60	–	6.60	41.00
Chicopee,	40.00	39.80	40.00	26.90	9.05	3.20	–	.65	79.80
Everett,	–	49.22	–	10.67	29.67	–	6.10	2.78	49.22
Fall River,	9.72	139.00	34.22	55.65	40.00	.80	–	18.05	148.72
Fitchburg,	–	138.31	–	113.88	–	–	16.97	7.46	138.31
Gloucester,	20.00	99.00	20.00	70.00	10.00	–	15.00	4.00	119.00
Haverhill,	7.00	139.00	83.00	7.00	15.00	28.00	6.00	7.00	146.00
Holyoke,	–	120.40	–	85.39	16.38	4.06	–	14.57	120.40
Lawrence,	11.00	97.00	11.00	58.67	6.00	.33	13.00	19.00	108.00
Lowell,	60.00	80.97	78.34	–	36.50	1.60	1.60	22.93	140.97
Lynn,	–	130.00	87.00	10.50	–	–	20.00	12.50	130.00
Malden,	25.00	64.76	25.00	42.76	18.00	2.00	–	2.00	89.76
Marlborough,	15.00	70.00	30.00	35.00	8.60	5.00	6.25	.75	85.00
Medford,	.50	52.50	–	30.00	18.43	2.99	.82	.76	53.00
Melrose,	11.50	48.50	11.00	13.50	29.90	4.30	.60	.70	60.00
New Bedford,	20.00	125.00	–	16.16	101.11	–	–	27.73	145.00
Newburyport,	6.00	62.00	18.00	35.00	11.00	2.00	1.00	1.00	68.00
Newton,	78.00	144.00	64.00	67.00	7.00	29.00	55.00	–	222.00
North Adams,	5.96	61.45	14.20	44.67	1.00	–	4.54	3.00	67.41
Northampton,	40.00	140.25	40.00	118.00	20.00	2.00	–	.25	180.25
Pittsfield,	7.00	146.50	52.00	86.00	–	3.00	9.00	3.50	153.50
Quincy,	77.00	88.00	77.00	40.00	10.50	9.00	20.50	8.00	165.00
Revere,	30.00	23.00	25.00	15.00	10.00	1.00	–	2.00	53.00
Salem,	–	62.30	8.56	23.19	21.49	–	3.40	5.66	62.30
Somerville,	22.05	77.01	10.00	10.00	52.24	16.65	–	10.17	99.06
Springfield,	16.00	151.00	16.60	53.50	68.50	11.60	–	16.80	167.00
Taunton,	2.00	147.00	40.00	65.00	28.00	9.50	1.00	5.50	149.00
Waltham,	5.81	58.60	5.81	19.89	30.30	.81	6.62	.98	64.41
Woburn,	1.05	67.09	1.05	56.34	7.40	1.35	2.00	–	68.14
Worcester,	19.17	194.72	19.17	82.10	76.38	.42	12.28	23.54	213.89
	536.18	3,812.26	865.67	1,464.61	1,183.85	195.38	234.68	404.25	4,348.44

Summary of Road Statistics, Miles (by Counties).

County.	Unimproved Roads.	Improved Roads.	Dirt.	Gravel.	Plain Macadam.	Bituminous Macadam.	Macadam, Oil-tar Coat.	Pavement.	Total.
Barnstable,	285.00	830.00	725.50	162.50	55.50	27.50	144.00	-	1,115.00
Berkshire,	771.96	1,053.61	1,232.63	469.57	38.50	14.98	61.02	8.87	1,825.57
Bristol,	120.72	1,435.70	399.52	629.81	356.91	30.55	82.95	56.68	1,556.42
Dukes,	47.00	116.10	103.25	5.50	10.85	-	22.50	21.00	163.10
Essex,	206.50	1,732.40	517.83	987.93	151.69	56.65	169.44	55.36	1,938.90
Franklin,	371.81	1,135.24	1,125.31	291.65	24.85	9.84	55.12	.28	1,507.05
Hampden,	263.50	1,346.70	1,010.74	345.84	126.95	41.06	50.24	35.37	1,610.20
Hampshire,	381.00	1,067.50	1,039.25	311.90	66.55	4.20	26.15	.45	1,448.50
Middlesex,	462.44	3,004.58	998.19	1,610.49	436.93	111.00	245.67	64.74	3,467.02
Nantucket,	77.50	36.50	106.50	-	-	-	7.50	-	114.00
Norfolk,	141.00	1,288.26	401.08	722.26	81.19	41.81	173.16	9.76	1,429.26
Plymouth,	331.66	1,524.68	794.54	799.86	115.92	16.88	117.76	11.38	1,856.34
Suffolk,	32.76	658.00	37.26	82.43	366.87	50.45	2.90	150.85	690.76
Worcester,	765.17	35,413.55	2,576.63	1,309.44	183.44	42.09	161.92	35.20	4,308.72
Total,	4,258.02	18,772.82	11,068.23	7,729.18	2,016.15	447.01	1,320.33	449.94	23,030.84
Cities,	536.18	3,812.26	865.77	1,464.61	1,183.85	195.38	234.68	404.25	4,348.44
Towns,	3,721.84	14,960.56	10,202.56	6,264.57	832.30	251.63	1,085.65	45.69	18,682.40

Expenditures for Highway Purposes, not including Sidewalks and Street Lighting (by Cities and Towns), 1911–13.

Town or City.	General.			Construction and Resurfacing.			Bridges and Culverts.			Totals.		
	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
Barnstable County.												
Barnstable,	$8,694 38	$8,516 43	$18,881 41	$16,108 26	$8,549 73	$1,546 30	$3,404 43	$12,609 38	$710 38	$28,207 07	$29,675 54	$21,138 09
Bourne,	7,000 00	6,364 46	8,569 85	8,500 00	9,100 00	31,147 33	1,000 00	500 00	–	16,500 00	15,964 46	39,717 18
Brewster,	600 00	1,150 00	632 23	11,500 00	–	10,911 48	–	–	–	12,100 00	1,150 00	11,543 71
Chatham,	822 65	1,182 65	3,900 00	6,000 00	7,300 00	378 70	–	–	–	6,822 65	8,482 65	4,278 70
Dennis,	2,559 12	3,435 12	2,529 00	4,025 04	5,678 83	951 52	–	–	–	6,584 16	9,113 95	3,480 52
Eastham,	307 67	370 67	185 00	609 49	26 00	–	–	–	26 70	917 16	396 67	211 70
Falmouth,	32,215 80	24,710 00	15,104 55	–	–	2,500 00	–	–	1,200 00	32,215 80	24,710 00	18,804 55
Harwich,	1,200 00	1,350 00	1,800 00	–	12,900 00	2,500 00	200 00	200 00	350 00	1,400 00	14,450 00	4,650 00
Mashpee,	864 68	991 36	888 29	200 00	3,000 00	144 77	–	–	–	1,064 68	3,991 36	1,333 06
Orleans,	2,035 00	4,025 00	400 00	–	–	8,900 00	–	–	7,500 00	2,035 00	4,025 00	16,800 00
Provincetown,	600 00	600 00	7,039 04	–	–	–	–	–	–	600 00	600 00	7,039 04
Sandwich,	4,093 99	4,173 86	3,500 00	–	–	8,550 00	–	–	130 00	4,093 99	4,173 86	12,180 00
Truro,	1,474 10	1,613 69	1,675 98	555 00	–	–	–	–	–	2,029 10	1,613 69	1,675 98
Wellfleet,	1,200 00	1,200 00	1,387 78	900 00	500 00	178 91	–	–	–	2,100 00	1,700 00	1,566 69
Yarmouth,	2,720 43	2,224 87	1,966 93	1,055 69	7,964 20	9,005 68	71 12	201 65	3,499 78	3,847 24	10,390 72	14,472 39
Totals,	$66,387 82	$61,908 11	$68,460 06	$49,453 48	$55,018 76	$76,714 69	$4,675 55	$13,511 03	$13,416 86	$120,516 85	$130,437 90	$158,591 61
Berkshire County.												
Adams,	$14,176 11	$9,521 27	$15,023 63	–	–	$6,705 05	$2,815 94	$1,923 37	$2,109 32	$16,992 05	$11,444 64	$23,838 00
Alford,	758 00	713 00	658 98	$492 00	$1,033 00	734 15	–	–	82 90	1,250 00	1,746 00	1,476 03
Beeket,	2,343 50	2,920 55	2,743 58	1,261 91	2,459 09	2,402 13	–	–	–	3,605 41	5,379 64	5,145 71
Cheshire,	3,014 56	2,898 36	3,268 15	–	–	–	589 31	–	–	3,603 87	2,898 36	3,268 15
Clarksburg,	729 45	397 11	2,923 72	125 00	175 00	–	64 11	417 65	–	918 56	989 76	2,923 72
Dalton,	2,000 00	2,000 00	10,100 00	2,000 00	6,000 00	–	–	–	1,000 00	4,000 00	8,000 00	11,100 00
Egremont,	1,940 32	2,868 39	1,500 00	–	–	1,500 00	–	–	500 00	1,940 32	2,868 39	3,500 00
Florida,	1,203 24	1,748 28	1,680 06	772 40	709 64	2,214 93	–	–	–	1,975 64	2,457 92	3,894 99
Great Barrington,	10,851 74	11,664 44	11,670 02	3,249 48	2,120 74	1,310 43	–	12,249 38	1,300 00	14,101 22	26,034 56	14,280 45
Hancock,	908 64	1,088 04	1,218 87	400 00	400 00	1,000 00	–	–	–	1,308 64	1,488 04	2,218 87
Hinsdale,	1,037 07	1,114 03	2,705 32	–	–	3,000 00	649 19	549 44	860 04	1,686 26	1,663 47	6,565 36
Lanesborough,	2,286 11	2,037 90	1,709 74	–	–	686 72	457 22	407 58	–	2,743 33	2,445 48	2,396 46
Lee,	6,926 37	6,894 12	8,395 55	–	–	9,633 57	2,358 00	–	–	9,284 37	6,894 12	18,029 12

Lenox,	5,271 51	8,732 81	16,360 79	2,548 34	3,070 51	-	354 48	672 30	1,149 15	8,174 33	12,475 62	17,509 94
Monterey,	1,000 00	1,000 00	1,162 50	-	-	400 00	-	-	900 00	1,000 00	1,000 00	2,462 50
Mount Washington,	682 81	162 61	1,169 50	-	-	367 05	-	-	-	682 81	162 61	1,536 55
New Ashford,	300 00	300 00	704 15	-	-	-	-	-	-	300 00	300 00	704 15
New Marlborough,	2,500 00	2,500 00	3,500 00	-	-	-	800 00	128 00	300 00	330 00	2,628 00	3,800 00
North Adams,	7,200 56	7,753 09	15,251 69	7,184 55	7,526 33	11,057 75	1,186 55	2,237 79	1,580 82	15,571 66	17,517 21	27,890 26
Otis,	1,586 02	1,285 45	1,621 42	594 41	1,221 29	931 18	-	-	-	2,180 43	2,506 74	2,552 60
Peru,	900 00	950 00	719 93	400 00	400 00	-	-	70 00	-	1,300 00	1,420 00	719 93
Pittsfield,	26,439 15	30,263 92	58,123 07	24,131 38	48,380 49	135,714 96	16,692 04	6,296 92	17,345 26	67,262 57	84,941 33	211,183 29
Richmond,	2,000 00	2,500 00	3,400 00	-	-	1,000 00	290 00	400 00	-	2,290 00	2,900 00	4,400 00
Sandisfield,	2,138 56	2,615 55	2,496 37	132 84	3,058 63	1,105 88	209 53	125 91	1,618 71	2,480 93	5,800 09	5,520 96
Savoy,	806 28	853 22	1,085 61	649 71	488 83	591 88	399 75	340 28	329 38	1,855 74	1,682 33	2,006 87
Sheffield,	3,033 72	4,455 84	5,837 25	2,289 82	9,967 61	21,423 21	-	610 22	1,574 24	5,323 54	15,033 67	28,834 70
Stockbridge,	-	7,220 00	7,732 14	-	23,000 00	1,400 00	-	600 00	495 80	-	30,820 00	9,627 94
Tyringham,	1,254 22	1,206 22	1,215 34	1,391 62	1,815 09	1,324 22	-	-	424 22	2,645 84	3,021 31	2,963 78
Washington,	1,674 54	1,806 71	1,651 68	800 00	1,074 87	1,220 28	-	-	-	2,474 54	2,881 58	2,871 96
West Stockbridge,	1,220 86	1,667 04	2,132 86	1,331 22	1,041 55	-	540 46	532 95	887 96	3,092 54	3,241 54	3,020 82
Williamstown,	4,300 00	6,300 00	8,783 15	-	3,000 00	6,000 00	2,400 00	3,200 00	2,177 00	6,700 00	12,500 00	16,960 15
Windsor,	1,492 00	1,335 00	1,448 14	1,938 13	2,588 92	-	-	-	-	3,430 13	3,923 92	1,448 14
Totals,	$111,975 34	$128,772 95	$197,993 21	$51,692 81	$119,531 59	$211,723 39	$29,806 58	$30,761 79	$34,934 80	$193,474 73	$279,066 33	$444,651 40
Bristol County.												
Acushnet,	$1,000 00	$2,000 00	$6,500 00	$2,500 00	$3,500 00	-	-	-	-	$3,500 00	$5,500 00	$6,500 00
Attleboro,	26,792 00	33,230 00	25,500 00	-	-	-	-	-	-	26,792 00	33,230 00	25,500 00
Berkley,	1,200 00	1,500 00	1,200 00	-	-	-	-	-	$128 57	1,200 00	1,500 00	1,328 57
Dartmouth,	20,300 00	24,200 00	9,764 96	-	-	$16,778 05	-	-	-	20,300 00	24,200 00	26,543 01
Dighton,	1,241 14	2,177 51	4,004 80	4,051 75	932 56	-	$1,423 53	$229 27	500 00	6,716 42	3,339 34	4,504 80
Easton,	8,000 00	8,000 00	17,709 33	-	-	-	-	-	-	8,000 00	8,000 00	17,709 33
Fairhaven,	1,000 00	1,000 00	1,000 00	10,000 00	14,000 00	9,000 00	1,000 00	500 00	500 00	12,000 00	15,500 00	10,500 00
Fall River,	34,152 51	64,094 73	61,166 92	72,119 53	97,208 20	45,479 24	594 45	889 81	456 13	106,866 49	162,192 74	107,102 29
Freetown,	2,747 00	3,165 00	3,031 97	4,000 00	-	63 20	-	-	-	6,747 00	3,165 00	3,095 17
Mansfield,	8,000 00	6,000 00	14,736 85	7,500 00	5,000 00	-	-	-	-	15,500 00	11,000 00	14,736 85
New Bedford,	3,829 98	6,218 86	7,937 36	201,008 32	191,909 35	194,934 17	1,991 01	914 71	234 09	206,829 31	199,042 92	203,105 62
N. Attleborough,	9,550 09	11,269 08	13,955 11	7,641 24	12,000 00	21,695 94	3,800 00	1,800 00	1,220 31	20,991 33	25,069 08	36,871 36
Norton,	3,360 42	4,300 66	6,321 96	2,788 16	-	8,056 40	-	-	288 30	6,148 58	4,300 66	14,666 66
Raynham,	2,203 05	2,679 02	2,426 91	1,999 95	1,999 00	-	-	-	300 00	4,203 00	4,678 02	2,726 91
Rehoboth,	4,053 71	4,309 17	5,680 24	2,365 02	1,882 01	1,803 52	500 00	-	-	6,918 73	6,191 18	7,483 76
Seekonk,	3,209 82	3,362 09	3,840 71	4,702 76	13,631 79	4,563 28	-	-	-	7,912 58	16,993 88	8,403 99
Somerset,	4,262 52	4,918 24	3,888 12	1,415 81	4,040 48	3,550 63	1,973 85	1,308 43	1,204 64	7,652 18	10,267 15	8,643 39
Swansea,	4,000 00	4,000 00	12,046 15	5,200 00	9,500 00	-	-	500 00	-	9,200 00	14,000 00	12,046 15
Taunton,	37,901 93	40,139 52	44,762 80	29,494 46	42,967 64	36,695 28	2,024 95	7,414 99	2,508 98	69,421 34	90,522 15	83,967 15
Westport,	5,880 84	3,991 71	9,639 66	12,971 80	6,224 19	8,382 73	-	-	-	18,852 64	10,215 90	18,022 39
Totals,	$182,685 01	$230,555 59	$255,113 94	$369,758 80	$404,795 22	$351,002 44	$13,307 79	$13,557 21	$7,341 02	$565,751 60	$648,908 02	$613,457 40

EXPENDITURES FOR HIGHWAY PURPOSES, NOT INCLUDING SIDEWALKS AND STREET LIGHTING, ETC. — *Continued.*

TOWN OR CITY.	GENERAL.			CONSTRUCTION AND RESURFACING.			BRIDGES AND CULVERTS.			TOTALS.		
	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
Dukes County.												
Chilmark,	$284 00	$499 73	$400 00	–	–	–	–	–	–	$284 00	$499 73	$400 00
Edgartown,	1,515 25	1,935 98	2,709 77	–	–	–	–	–	–	1,515 25	1,935 98	2,709 77
Gay Head,	150 00	150 00	34 03	–	–	–	–	–	–	150 00	150 00	34 03
Gosnold,	–	–	–	–	–	$300 00	–	–	–	–	–	300 00
Oak Bluffs,	373 65	493 50	2,260 67	$1,692 63	$1,705 19	1,602 82	$634 13	$295 44	$487 36	2,700 41	2,494 13	4,350 85
Tisbury,	1,107 60	1,398 52	2,036 76	2,680 59	3,786 00	975 00	25 20	179 64	149 95	3,813 39	5,364 16	3,161 71
West Tisbury,	550 00	750 00	589 71	–	–	222 90	–	–	267 81	550 00	750 00	1,080 42
Totals,	$3,980 50	$5,227 73	$8,030 94	$4,373 22	$5,491 19	$3,100 72	$659 33	$475 08	$905 12	$9,013 05	$11,194 00	$12,036 78
Essex County.												
Amesbury,	$7,606 06	$10,688 79	$15,266 89	–	–	–	$2,784 71	$1,502 64	$3,421 79	$10,390 77	$12,191 43	$18,688 68
Andover,	6,684 00	7,136 00	12,202 34	$7,780 00	$9,744 00	$3,685 11	–	–	93 28	14,464 00	16,880 00	15,980 73
Beverly,	32,048 54	31,205 85	31,866 06	22,729 93	38,726 44	39,713 41	1,600 00	425 32	49 88	56,378 47	70,357 61	71,629 35
Boxford,	2,500 00	3,000 00	1,842 10	600 00	600 00	–	–	–	146 11	3,100 00	3,600 00	1,988 21
Danvers,	6,887 65	12,608 79	6,589 24	–	–	11,025 76	–	–	–	6,887 65	12,608 79	17,615 00
Essex,	1,739 47	2,295 99	1,744 82	–	544 00	–	–	–	–	1,739 47	2,839 99	1,744 82
Georgetown,	500 00	1,640 00	2,060 27	–	–	–	–	–	–	500 00	1,640 00	2,060 27
Gloucester,	40,925 17	41,960 02	40,000 00	9,299 13	11,513 96	4,000 00	2,455 02	3,561 88	3,234 58	52,679 32	57,035 86	47,234 58
Groveland,	1,714 12	1,634 31	1,627 24	4,868 15	1,785 67	–	–	–	283 39	6,582 27	3,419 98	1,910 63
Hamilton,	9,082 48	8,085 77	8,000 00	1,175 12	–	–	–	–	–	10,257 60	8,085 77	8,000 00
Haverhill,	21,629 74	17,077 40	17,971 32	117,851 04	53,977 33	66,955 98	7,774 19	7,249 24	4,421 61	147,254 97	78,303 97	89,348 91
Ipswich,	12,441 61	12,073 92	13,624 55	495 54	6,537 12	2,899 93	29 00	596 12	–	12,966 15	19,207 16	16,524 48
Lawrence,	33,035 34	27,918 71	28,938 91	65,600 00	56,837 43	201,581 64	3,801 47	6,920 54	8,854 56	102,436 81	91,676 68	239,375 11
Lynn,	1,687 79	4,636 26	8,717 72	81,411 53	61,911 33	116,925 32	6,627 60	8,507 20	265 86	89,726 92	75,054 79	125,908 90
Lynnfield,	2,500 00	2,500 00	3,400 62	–	–	–	–	–	–	2,500 00	2,500 00	3,400 62
Manchester,	18,000 00	16,000 00	28,272 21	–	–	–	–	–	–	18,000 00	18,000 00	28,272 21
Marblehead,	8,862 00	12,015 50	17,926 06	54,950 00	13,075 00	–	–	–	–	63,812 00	25,180 50	17,926 06
Merrimac,	1,635 76	1,517 30	2,367 08	–	–	–	–	–	–	1,635 76	1,517 30	2,367 08
Methuen,	2,500 00	3,000 00	5,000 00	18,000 00	9,000 00	18,000 00	–	–	–	20,500 00	12,000 00	23,000 00
Middleton,	2,946 89	2,355 88	3,225 58	1,168 24	–	–	–	–	–	4,115 13	2,355 88	3,225 58
Nahant,	14,000 00	66,447 00	13,570 59	–	–	–	–	–	–	14,000 00	66,447 00	13,570 59
Newbury,	2,200 00	2,500 00	1,327 70	–	–	4,400 00	–	–	115 00	2,200 00	2,500 00	5,842 70
Newburyport,	15,000 00	12,000 00	5,373 53	–	–	9,685 89	–	–	3,236 33	15,000 00	12,000 00	18,295 75

North Andover,	19,148 06	19,315 45	5,110 58	–	–	8,450 00	–	–	–	19,148 06	19,315 45	13,560 58
Peabody,	–	–	9,505 79	19,921 79	21,283 88	6,064 81	–	364 28	954 19	19,921 79	21,648 16	16,524 79
Rockport,	6,778 18	4,829 47	7,231 38	2,000 00	2,000 00	1,594 66	500 00	400 00	150 00	9,278 18	7,229 47	8,976 04
Rowley,	97 25	33 91	385 52	778 51	1,155 01	2,168 90	90 32	108 66	25 01	966 08	1,297 58	2,579 43
Salem,	3,175 83	2,715 30	44,182 94	11,229 90	15,113 50	17,820 80	832 95	874 11	–	15,238 68	18,702 91	62,003 74
Salisbury,	2,693 40	2,431 96	3,686 60	–	–	8,409 33	761 49	598 67	–	3,454 89	3,030 63	12,095 93
Saugus,	11,733 82	12,328 07	10,912 51	–	–	–	–	–	530 65	11,733 82	12,328 07	11,443 16
Swampscott,	17,700 00	19,700 00	24,039 34	10,000 00	10,000 00	4,211 25	–	–	–	27,700 00	29,700 00	28,250 59
Topsfield,	2,150 00	4,400 00	9,616 38	–	–	–	–	–	380 73	2,150 00	4,400 00	9,997 11
Wenham,	2,500 00	2,500 00	3,074 16	–	5,350 00	7,571 74	–	–	–	2,500 00	7,850 00	10,645 90
West Newbury,	1,181 93	1,079 84	1,258 02	254 50	254 50	2,254 50	495 96	978 69	864 09	1,932 39	2,313 03	4,376 61
Totals,	$313,285 09	$371,721 49	$389,918 05	$430,113 38	$319,409 17	$537,419 03	$27,752 71	$32,087 35	$27,027 06	$771,151 18	$732,218 01	$954,364 14
Franklin County.												
Ashfield,	$2,525 50	$2,187 29	$2,500 00	–	–	$1,000 00	$240 44	$100 50	$400 00	$2,765 94	$2,287 79	$3,900 00
Bernardston,	1,207 28	1,338 59	1,194 98	–	$211 54	–	–	–	336 55	1,207 28	1,550 13	1,531 53
Buckland,	1,234 46	1,525 14	2,167 73	–	1,000 00	3,376 88	-	-	2,509 87	1,234 46	2,525 14	8,054 48
Charlemont,	2,400 00	2,400 00	2,085 48	$400 00	400 00	–	–	–	1,500 00	2,800 00	2,800 00	3,585 48
Colrain,	2,564 22	4,049 02	3,000 00	–	–	–	–	–	500 00	2,564 22	4,049 02	3,500 00
Conway,	3,000 00	3,000 00	4,635 57	–	–	–	–	–	–	3,000 00	3,000 00	4,635 57
Deerfield,	2,380 00	2,000 00	7,000 00	–	–	–	1,198 00	1,950 00	–	3,578 00	3,950 00	7,000 00
Erving,	1,250 00	1,855 50	7,988 94	–	1,074 79	–	–	–	–	1,250 00	2,930 29	7,988 94
Gill,	527 00	550 00	1,188 47	1,360 00	–	215 60	580 00	–	193 14	2,467 00	550 00	1,597 21
Greenfield,	–	17,304 88	23,619 65	–	13,314 25	1,000 00	–	1,152 08	22,100 00	–	31,771 21	46,719 65
Hawley,	1,883 91	1,455 93	1,543 63	–	–	600 00	114 77	175 07	484 30	1,998 68	1,631 00	2,627 93
Heath,	1,072 00	1,200 00	1,722 72	350 00	642 00	440 30	70 80	100 00	–	1,492 80	1,942 00	2,163 02
Leverett,	1,160 00	935 00	1,375 07	1,300 00	958 00	1,140 64	100 00	154 00	41 60	2,560 00	2,047 00	2,557 31
Leyden,	800 30	742 85	906 05	475 85	402 94	475 85	77 59	635 97	–	1,353 74	1,781 76	1,381 90
Monroe,	700 00	700 00	1,072 33	–	–	804 60	100 00	100 00	–	800 00	800 00	1,876 93
Montague,	7,100 00	7,100 00	7,676 73	–	6,500 00	–	–	10,000 00	42 55	7,100 00	23,600 00	7,719 28
New Salem,	1,200 00	1,200 00	1,400 00	500 00	500 00	700 00	–	–	–	1,700 00	1,700 00	2,100 00
Northfield,	3,500 00	3,500 00	2,538 45	300 00	500 00	300 00	1,000 00	600 00	1,281 78	4,800 00	4,600 00	4,120 23
Orange,	7,000 00	7,000 00	7,497 27	–	–	2,950 47	–	–	–	7,000 00	7,000 00	10,447 74
Rowe,	1,125 18	1,430 25	1,632 98	622 70	910 05	2,151 93	257 00	881 34	649 17	2,004 88	3,221 64	4,434 08
Shelburne,	5,366 92	3,263 08	3,143 04	–	–	–	–	–	–	5,366 92	3,263 08	3,143 04
Shutesbury,	1,000 00	1,186 53	1,134 46	–	–	–	–	–	–	1,000 00	1,186 53	1,134 46
Sunderland,	509 30	757 04	1,418 95	–	–	–	191 57	310 85	410 77	700 87	1,067 89	1,829 72
Warwick,	1,928 43	2,131 15	1,683 98	–	–	–	–	–	–	1,928 43	2,131 15	1,683 98
Wendell,	1,463 10	1,663 55	1,751 76	1,115 42	2,037 11	1,300 00	598 30	500 00	–	3,176 82	4,200 66	3,051 76
Whately,	2,026 17	1,590 16	1,627 67	–	–	–	334 47	264 71	379 08	2,360 64	1,854 87	2,006 75
Totals,	$54,923 77	$72,065 96	$93,505 91	$6,423 97	$28,450 68	$16,456 27	$4,862 94	$16,924 52	$30,828 81	$66,210 68	$117,441 16	$140,790 99

EXPENDITURES FOR HIGHWAY PURPOSES, NOT INCLUDING SIDEWALKS AND STREET LIGHTING, ETC. — *Continued.*

TOWN OR CITY.	GENERAL.			CONSTRUCTION AND RESURFACING.			BRIDGES AND CULVERTS.			TOTALS.		
	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
Hampden County.												
Agawam,	$3,709 22	$3,079 82	$4,760 21	$8,416 25	$8,962 16	$8,200 00	$1,714 10	$4,611 08	–	$13,839 57	$16,653 06	$12,960 21
Blandford,	4,994 00	6,719 00	3,680 31	–	–	–	182 00	361 00	$228 79	5,176 00	7,080 00	3,909 10
Brimfield,	1,629 23	2,320 56	4,338 29	–	–	–	–	–	500 00	1,629 23	2,320 56	4,838 29
Chester,	2,160 32	2,003 83	2,172 73	449 18	2,777 75	988 01	450 51	869 20	2,635 20	3,060 01	5,650 78	5,795 94
Chicopee,	21,532 29	19,717 99	23,325 30	15,215 37	15,829 53	12,136 34	236 94	7,572 63	9,687 44	36,984 60	43,120 15	45,149 08
East Longmeadow,	1,395 19	896 75	2,036 64	1,388 70	2,355 77	918 71	–	–	–	2,783 89	3,252 52	2,955 35
Granville,	2,278 08	2,088 81	2,500 00	960 29	3,282 14	2,175 00	59 00	600 00	85 00	3,297 37	5,970 95	4,760 00
Hampden,	802 26	703 80	687 06	1,721 87	1,618 85	1,301 83	–	–	–	2,524 13	2,322 65	1,988 89
Holland,	407 47	435 34	452 69	–	–	–	–	–	128 35	407 47	435 34	581 04
Holyoke,	51,190 95	61,384 07	57,003 95	64,607 75	21,270 04	106,228 35	–	–	–	115,798 70	82,654 11	163,232 30
Longmeadow,	845 91	968 20	1,718 33	2,151 15	4,232 96	10,631 76	–	–	–	2,997 06	5,201 16	12,350 09
Ludlow,	2,500 00	8,000 00	5,943 18	–	1,000 00	509 51	2,000 00	1,000 00	431 41	4,500 00	10,000 00	6,884 10
Monson,	7,751 52	9,249 91	7,005 44	610 28	3,446 45	2,968 99	–	2,000 00	–	8,361 80	14,696 36	9,974 43
Montgomery,	702 79	501 99	628 38	–	–	392 65	193 04	29 59	66 93	895 83	531 58	1,087 96
Palmer,	3,500 00	5,917 00	8,617 56	8,600 00	500 00	35,959 51	1,200 00	1,200 00	1,495 18	13,300 00	7,617 00	46,072 25
Russell,	2,300 54	2,405 13	2,262 86	3,487 38	8,144 26	3,021 43	–	–	–	5,787 92	10,549 39	5,284 29
Southwick,	2,075 92	2,065 64	2,038 81	2,325 56	1,016 96	1,263 30	260 42	663 61	1,708 93	4,661 90	3,746 21	5,011 04
Springfield,	153,450 00	144,100 00	54,228 50	121,600 00	134,315 00	345,596 76	2,800 00	16,403 00	10,749 04	277,850 00	294,818 00	410,574 30
Tolland,	1,088 11	1,123 88	1,137 23	689 65	2,088 63	625 41	30 00	127 92	128 19	1,807 76	3,340 43	1,890 83
Wales,	738 58	934 34	682 38	–	–	–	41 87	48 33	–	780 45	982 67	682 38
West Springfield,	9,538 38	9,916 70	10,052 05	14,365 01	20,725 24	16,665 11	595 50	1,348 58	2,817 52	24,498 89	31,990 52	29,534 63
Westfield,	9,556 12	6,095 31	15,915 80	69,130 38	64,798 84	4,000 00	2,154 45	4,552 86	1,485 23	80,840 95	75,447 01	21,401 03
Wilbraham,	1,000 00	1,000 00	1,000 00	2,230 50	2,989 72	2,921 89	–	–	–	3,230 50	3,989 72	3,921 89
Totals,	$285,146 88	$291,628 07	$212,187 70	$317,949 32	$299,354 30	$556,504 56	$11,917 83	$41,387 80	$32,147 21	$615,014 03	$632,370 17	$800,839 47
Hampshire County.												
Amherst,	$10,898 71	$11,408 02	$11,100 00	–	–	$4,200 00	–	–	–	$10,898 71	$11,408 02	$15,300 00
Belchertown,	3,000 00	2,800 00	3,137 16	–	–	–	$550 00	$150 00	$360 84	3,550 00	2,950 00	3,498 00
Chesterfield,	1,543 00	1,670 00	1,990 77	$1,077 00	$913 00	1,169 44	581 00	–	514 07	3,201 00	2,583 00	3,674 28
Cummington,	2,248 00	2,635 00	1,678 84	–	–	96 25	–	–	1,000 00	2,248 00	2,635 00	2,775 09
Easthampton,	10,083 86	9,670 60	7,844 50	2,707 15	1,240 52	8,248 29	637 31	263 50	1,944 93	13,428 32	11,174 62	18,037 72
Enfield,	2,200 00	2,000 00	2,284 66	–	–	–	–	–	–	2,200 00	2,000 00	2,284 66
Goshen,	800 00	800 00	925 45	–	–	–	–	–	–	800 00	800 00	925 45
Granby,	1,113 67	1,847 39	1,961 30	–	–	–	–	–	–	1,113 67	1,847 39	1,961 30

Greenwich,	643 90	882 45	1,500 00	468 69	375 00	900 00	–	203 92	–	1,112 59	1,461 37	2,400 00
Hadley,	3,000 00	3,500 00	10,813 00	–	–	3,988 86	–	–	1,610 77	3,000 00	3,500 00	16,412 63
Hatfield,	2,556 00	1,509 00	3,197 56	7,608 00	9,503 00	14,649 48	613 00	502 00	–	10,777 00	11,514 00	17,847 04
Huntington,	1,699 88	2,330 42	3,101 20	562 59	3,324 03	5,468 24	1,027 37	161 90	1,105 80	3,239 84	5,816 35	9,675 24
Middlefield,	1,000 00	1,000 00	1,113 69	200 00	200 00	1,013 14	150 00	225 00	–	1,350 00	1,425 00	2,126 83
Northampton,	12,830 31	15,209 78	13,803 35	5,204 30	5,915 03	7,017 90	691 95	1,297 70	1,297 70	18,726 56	22,422 51	22,118 95
Pelham,	1,262 07	1,334 29	1,285 59	1,155 76	899 23	–	–	–	250 00	2,417 83	2,233 52	1,535 59
Plainfield,	900 00	1,052 02	1,462 35	494 40	325 81	522 16	110 00	451 00	6 38	1,504 40	1,828 83	1,990 89
Prescott,	1,598 27	1,566 23	665 97	–	–	–	–	–	–	1,598 27	1,566 23	665 97
South Hadley,	3,650 00	3,200 00	8,398 69	2,000 00	9,450 00	2,103 07	1,350 00	2,250 00	–	7,000 00	14,900 00	10,501 76
Southampton,	1,800 00	2,000 00	1,800 00	750 00	500 00	500 00	–	–	–	2,550 00	2,500 00	2,300 00
Ware,	7,384 00	7,568 00	7,411 16	–	–	–	–	–	–	7,384 00	7,568 00	7,411 16
Westhampton,	1,047 35	852 16	896 38	993 02	1,201 65	998 70	404 60	663 25	204 39	2,444 97	2,717 06	2,099 47
Williamsburg,	2,111 87	2,211 25	3,180 61	4,933 03	3,458 92	6,107 26	–	–	4,074 23	7,044 90	5,670 17	13,362 10
Worthington,	1,800 00	1,500 00	2,029 72	1,000 00	500 00	500 00	–	–	–	2,800 00	2,000 00	2,529 72
Totals,	$75,170 89	$78,546 61	$91,581 95	$29,153 94	$37,806 19	$57,482 79	$6,115 23	$6,168 27	$12,369 11	$110,440 06	$122,521 07	$161,433 85
Middlesex County.												
Acton,	$5,000 00	$6,700 00	$4,000 00	–	–	–	–	–	–	$5,000 00	$6,700 00	$4,000 00
Arlington,	8,955 86	6,663 79	5,415 86	$8,557 52	$25,500 00	$12,130 34	–	–	–	17,513 38	32,163 79	17,546 20
Ashby,	1,558 94	2,132 01	2,335 67	–	–	2,025 90	–	–	–	1,558 94	2,132 01	4,361 57
Ashland,	4,227 63	3,860 29	2,485 56	–	–	–	–	–	$525 00	4,227 63	3,860 29	3,010 56
Ayer,	2,228 96	2,916 69	3,277 37	–	2,000 00	–	–	$3,500 00	–	2,228 96	8,416 69	3,277 37
Bedford,	6,735 20	10,586 23	4,854 52	–	–	4,528 47	–	–	381 54	6,735 20	10,586 23	9,764 53
Belmont,	15,000 00	20,000 00	25,997 21	–	–	–	–	–	–	15,000 00	20,000 00	25,997 21
Billerica,	10,896 73	6,245 78	9,051 66	5,254 02	1,013 59	2,486 89	$2,026 20	26,038 40	678 22	18,176 95	33,297 77	12,216 77
Boxborough,	831 34	945 78	873 87	–	623 35	–	–	27 86	–	831 34	1,596 99	873 87
Burlington,	2,000 00	2,000 00	2,000 00	5,000 00	5,000 00	–	–	–	1,785 25	7,000 00	7,000 00	3,785 25
Cambridge,	32,000 00	35,000 00	35,000 00	139,527 50	175,000 00	15,660 00	26,500 00	28,812 00	11,450 00	198,027 50	238,812 00	202,450 00
Carlisle,	1,200 00	1,200 00	1,200 00	400 00	500 00	650 00	–	650 00	–	1,600 00	2,350 00	1,850 00
Chelmsford,	7,944 62	6,971 89	6,957 42	–	–	–	–	–	–	7,944 62	6,971 89	6,957 42
Concord,	23,405 67	26,287 12	41,702 09	2,500 00	1,500 00	34,046 83	3,941 77	5,000 00	2,608 23	29,847 44	32,787 12	78,357 15
Dracut,	2,000 00	4,000 00	5,508 10	15,000 00	11,393 70	16,295 58	–	–	–	17,000 00	15,393 70	21,803 68
Dunstable,	683 00	630 00	840 00	–	–	–	–	–	190 00	683 00	630 00	1,030 00
Everett,	5,000 67	5,872 90	6,531 26	31,731 94	31,476 84	22,982 05	–	–	–	36,732 61	37,349 74	29,513 31
Framingham,	4,850 50	5,935 70	12,271 02	–	–	7,673 84	–	–	511 89	4,850 50	5,935 70	20,456 75
Groton,	4,000 00	4,000 00	4,979 58	–	–	–	–	–	–	4,000 00	4,000 00	4,979 58
Holliston,	2,500 00	2,700 00	2,856 82	700 00	300 00	–	–	–	–	3,200 00	3,000 00	2,856 82
Hopkinton,	1,500 00	2,500 00	4,982 64	–	–	–	–	–	–	1,500 00	2,500 00	4,982 64
Hudson,	6,373 41	6,124 16	9,074 23	3,054 21	–	–	400 00	499 24	4,734 31	9,327 62	6,623 40	13,808 54
Lexington,	4,800 00	6,000 00	–	6,200 00	8,000 00	25,535 79	350 00	1,500 00	200 00	11,350 00	15,500 00	25,735 79
Lincoln,	7,000 00	7,000 00	12,846 98	2,000 00	3,000 00	–	5,000 00	–	657 23	14,000 00	10,000 00	13,504 21
Littleton,	1,500 00	2,100 00	1,800 00	–	–	–	–	–	–	1,500 00	2,100 00	1,800 00
Lowell,	43,212 83	38,735 53	41,367 30	103,746 82	107,741 79	139,559 52	30,003 12	10,668 77	18,153 60	176,962 77	157,146 09	199,080 42

EXPENDITURES FOR HIGHWAY PURPOSES, NOT INCLUDING SIDEWALKS AND STREET LIGHTING, ETC. — *Continued.*

TOWN OR CITY.	GENERAL.			CONSTRUCTION AND RESURFACING.			BRIDGES AND CULVERTS.			TOTALS.		
	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
Middlesex County — Con.												
Malden,	$57,212 00	$58,285 00	$55,487 00	$15,326 00	$15,484 00	$57,126 00	$5,128 00	$1,010 00	$3,524 00	$77,666 00	$74,779 00	$116,137 00
Marlborough,	15,773 63	18,963 21	22,835 68	9,739 96	32,603 13	24,283 38	128 82	–	5,557 95	25,642 41	51,566 34	52,677 01
Maynard,	4,000 00	5,000 00	4,535 16	–	–	–	–	–	–	4,000 00	5,000 00	4,535 16
Medford,	40,236 04	46,002 50	47,925 79	–	3,005 85	5,267 38	233 32	527 31	299 27	40,469 36	49,535 66	53,492 44
Melrose,	3,361 75	3,221 61	14,922 56	17,262 24	14,004 23	25,134 35	376 44	79 53	130 85	21,000 43	17,305 37	40,187 76
Natick,	15,634 87	15,501 74	14,537 70	544 37	2,878 54	3,137 84	–	250 00	1,716 41	16,179 24	18,630 28	19,391 95
Newton,	43,924 00	34,917 00	48,990 00	18,367 00	36,075 00	41,110 00	–	–	–	62,291 00	70,992 00	90,100 00
North Reading,	1,675 59	1,733 54	1,624 38	5,956 64	4,131 50	2,828 18	–	–	2,042 14	7,632 23	5,865 04	6,494 70
Pepperell,	–	–	3,027 32	–	–	664 41	–	–	317 74	–	–	4,009 47
Reading,	–	2,337 09	3,700 54	–	4,024 90	9,631 45	–	–	–	–	6,361 99	13,331 99
Sherborn,	3,800 00	4,500 00	4,500 00	–	–	1,500 00	–	–	–	3,800 00	4,500 00	6,000 00
Shirley,	1,662 51	2,146 28	1,800 00	32 13	–	2,050 00	258 29	195 50	5,181 98	1,952 93	2,341 78	9,031 98
Somerville,	10,256 81	11,306 01	22,489 60	9,588 86	8,312 03	2,405 34	48,739 97	50,273 88	37,441 67	68,585 64	69,891 92	62,336 61
Stoneham,	6,413 20	10,942 37	3,928 58	4,042 00	4,381 18	1,049 31	–	–	154 86	10,455 20	15,323 55	5,132 75
Stow,	1,794 08	1,877 40	2,156 14	–	–	–	–	–	–	1,794 08	1,877 40	2,156 14
Sudbury,	3,200 00	3,500 00	3,323 32	3,200 00	3,200 00	300 00	–	300 00	–	6,400 00	7,000 00	3,623 32
Tewksbury,	3,793 68	3,777 57	4,279 22	1,383 80	–	500 00	–	547 50	550 00	5,177 48	4,325 07	5,329 22
Townsend,	2,100 00	2,150 00	1,729 38	–	–	992 14	–	–	291 59	2,100 00	2,150 00	3,013 11
Tyngsborough,	3,296 00	3,771 00	3,859 30	–	–	–	–	–	–	3,296 00	3,771 00	3,859 30
Wakefield,	20,000 00	15,000 00	31,803 00	–	11,000 00	15,334 00	–	–	–	20,000 00	26,000 00	47,137 00
Waltham,	27,320 30	31,670 39	25,575 65	1,322 04	9,863 13	13,265 93	12,191 95	64 40	1,417 41	40,834 29	41,597 92	40,258 99
Watertown,	6,050 61	6,772 33	7,733 02	16,877 35	15,952 87	14,890 83	1,211 37	706 50	680 59	24,139 33	23,431 70	23,304 44
Wayland,	2,300 00	5,000 00	3,457 08	–	–	7,016 90	–	–	416 41	2,300 00	5,000 00	10,890 39
Westford,	3,787 98	4,014 32	4,000 00	–	–	650 00	–	–	–	3,787 98	4,014 32	4,650 00
Weston,	12,000 00	12,000 00	11,000 00	5,000 00	2,200 00	6,000 00	–	–	–	17,000 00	14,200 00	17,000 00
Wilmington,	8,612 94	5,694 27	8,187 40	–	–	2,021 00	–	–	–	8,612 94	5,694 27	10,208 40
Winchester,	22,312 36	25,252 95	1,762 01	–	1,671 35	22,763 64	–	–	875 69	22,312 36	26,924 30	25,401 34
Woburn,	1,749 99	1,869 55	19,342 21	12,543 51	9,666 68	17,949 93	683 97	699 03	–	14,977 47	12,235 26	37,292 14
Totals,	$527,673 70	$554,314 00	$626,721 20	$444,857 91	$551,503 66	$701,787 22	$137,173 22	$131,349 92	$102,473 83	$1,109,704 83	$1,237,167 58	$1,430,982 25
Nantucket County.												
Nantucket,	$8,665 56	$3,792 98	$1,024 68	$720 74	$7,186 52	$17,545 81	–	–	$300 00	$9,386 30	$10,979 50	$18,870 49

Norfolk County.												
Avon,	$2,020 03	$1,832 34	$2,190 70	–	$400 00	–	–	–	–	$2,020 03	$2,232 34	$2,190 70
Bellingham,	2,456 56	1,922 79	1,920 97	–	–	$1,977 98	$192 75	$108 90	$547 12	2,649 31	2,031 69	4,446 07
Braintree,	12,000 00	12,000 00	34,070 94	$5,000 00	5,000 00	–	500 00	500 00	–	17,500 00	17,500 00	34,070 94
Brookline,	34,000 00	35,000 00	142,790 45	70,099 66	117,890 62	71,039 13	2,252 04	6 85	150 35	106,951 70	152,397 47	213,979 93
Canton,	10,233 31	10,539 54	13,771 59	–	–	–	–	–	720 00	10,233 31	10,539 54	14,491 59
Cohasset,	10,000 00	12,091 00	13,270 57	–	–	9,710 20	–	–	600 00	10,000 00	12,091 00	23,580 77
Dedham,	8,000 00	8,500 00	14,983 55	11,300 00	12,000 00	16,903 47	700 00	500 00	450 00	20,000 00	21,000 00	32,337 02
Dover,	5,551 29	5,626 19	6,066 87	–	447 04	–	201 05	77 56	22 70	5,752 34	6,150 79	6,089 57
Foxborough,	3,371 00	4,573 00	4,517 74	1,000 00	–	–	–	466 00	236 70	4,371 00	5,039 00	4,754 44
Franklin,	6,500 00	7,000 00	7,000 00	–	–	–	–	–	1,958 68	6,500 00	7,000 00	8,958 68
Holbrook,	2,252 11	2,940 47	3,594 47	–	304 00	400 00	–	–	58 57	2,252 11	3,244 47	4,053 04
Medfield,	3,000 00	3,000 00	3,458 71	1,000 00	1,000 00	1,428 31	75 35	92 98	100 76	4,075 35	4,092 98	4,987 78
Medway,	3,000 00	3,000 00	3,573 25	–	–	1,000 00	–	–	–	3,000 00	3,000 00	4,573 25
Millis,	1,500 00	1,500 00	1,573 73	–	000 00	1,134 80	175 00	4,200 00	126 93	1,675 00	6,300 00	2,835 46
Milton,	26,681 42	27,143 17	28,140 41	14,934 91	17,406 61	21,738 58	2,257 01	1,872 35	2,790 91	43,873 34	46,422 13	52,669 90
Needham,	6,500 00	5,000 00	1,635 55	6,230 00	4,700 00	12,435 90	100 00	300 00	1,012 40	12,830 00	10,000 00	15,083 85
Norfolk,	2,000 00	2,000 00	2,014 12	–	–	–	–	–	–	2,000 00	2,000 00	2,014 12
Norwood,	3,271 62	4,303 01	16,806 12	663 23	5,450 00	6,250 00	793 27	618 91	550 00	4,728 12	10,371 92	23,606 12
Plainville,	2,227 19	1,621 78	2,979 71	–	–	288 15	–	–	–	2,227 19	1,621 78	3,267 86
Quincy,	25,000 00	45,000 00	47,591 33	78,728 00	7,500 00	24,411 04	2,500 00	3,000 00	–	106,228 00	55,500 00	72,002 37
Randolph,	6,262 70	5,922 56	5,930 69	810 00	641 15	–	–	–	–	7,072 70	6,563 71	5,930 69
Sharon,	4,635 36	4,539 66	6,079 15	71 46	16 19	3,809 03	–	–	–	4,706 82	4,555 85	9,888 18
Stoughton,	9,300 00	8,300 00	10,482 77	1,200 00	900 00	–	–	–	–	10,500 00	9,200 00	10,482 77
Walpole,	7,503 05	7,835 44	5,042 30	2,841 99	3,090 16	5,923 48	1,000 11	4,480 05	2,333 44	11,345 15	21,405 65	13,299 22
Wellesley,	18,832 69	18,692 50	24,170 97	3,991 02	7,000 00	11,413 22	–	–	–	22,823 71	25,692 50	35,584 19
Westwood,	4,000 00	4,382 00	4,764 75	–	–	–	–	–	–	4,000 00	4,382 00	4,764 75
Weymouth,	19,121 33	18,766 67	23,448 03	1,400 00	2,700 00	350 00	620 00	6,508 24	962 00	21,141 33	27,974 91	24,760 03
Wrentham,	2,000 00	2,000 00	3,374 13	–	500 00	–	–	–	–	2,000 00	2,500 00	3,374 13
Totals,	$241,219 66	$265,032 12	$435,243 57	$199,770 27	$193,545 77	$190,213 29	$11,366 58	$22,731 84	$12,620 56	$452,456 51	$481,309 73	$638,077 42
Plymouth County.												
Abington,	$3,100 00	$3,250 00	$9,405 95	$3,100 00	$3,250 00	–	$800 00	$800 00	$1,324 15	$7,000 00	$7,300 00	$10,730 10
Bridgewater,	7,378 10	5,260 22	11,115 92	2,251 59	3,911 25	$3,500 00	394 06	1,814 56	126 65	10,023 75	10,986 03	14,742 57
Brockton,	36,000 00	37,000 00	37,562 56	70,000 00	27,500 00	51,522 33	–	–	4,000 00	106,000 00	64,500 00	93,084 89
Carver,	2,500 00	2,500 00	7,342 08	11,500 00	3,700 00	4,349 83	500 00	500 00	262 17	14,500 00	6,700 00	11,954 08
Duxbury,	5,350 26	5,653 45	7,418 47	–	–	4,896 43	–	75 00	–	5,350 26	5,728 45	12,314 90
East Bridgewater,	6,923 77	6,251 91	4,128 28	434 11	1,202 26	7,905 26	412 13	231 50	212 51	7,770 01	7,685 67	12,246 05
Halifax,	1,397 46	1,500 13	1,422 20	17 25	1,302 33	–	73 50	60 00	31 00	1,488 21	2,862 46	1,453 20
Hanover,	2,918 22	2,568 74	4,000 00	1,459 11	1,284 37	–	637 68	136 54	250 00	5,015 01	3,989 65	4,250 00
Hanson,	2,233 51	2,461 38	3,405 91	2,805 27	4,028 69	3,252 21	376 95	199 87	118 02	5,415 73	6,689 94	6,776 14
Hingham,	16,605 54	16,258 06	15,804 47	–	–	1,984 43	–	–	–	16,605 54	16,258 06	17,788 90
Hull,	17,658 06	20,710 20	12,685 63	6,527 43	17,329 86	18,558 31	–	–	–	24,185 49	38,040 06	31,243 94
Kingston,	5,166 00	4,121 00	4,809 20	–	1,000 00	–	–	1,000 00	–	5,166 00	6,121 00	4,809 20

EXPENDITURES FOR HIGHWAY PURPOSES, NOT INCLUDING SIDEWALKS AND STREET LIGHTING, ETC. — *Continued.*

CITY OR TOWN.	GENERAL.			CONSTRUCTION AND RESURFACING.			BRIDGES AND CULVERTS.			TOTALS.		
	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
Plymouth County — Con.												
Lakeville,	$1,465 97	$1,524 31	$1,910 84	$3,630 73	$3,663 53	$2,458 63	–	–	–	$5,096 70	$5,187 84	$4,369 47
Marion,	4,499 00	6,654 00	7,760 17	6,390 00	3,471 00	5,141 74	–	–	–	10,889 00	10,125 00	12,901 91
Marshfield,	4,000 00	7,598 96	9,593 52	4,950 00	–	–	$704 00	$3,488 73	$645 72	9,654 00	11,087 69	10,239 24
Mattapoisett,	5,500 00	6,000 00	1,879 44	–	–	6,450 00	–	–	–	5,500 00	6,000 00	8,329 44
Middleborough,	23,000 00	22,000 00	–	–	4,000 00	24,800 00	–	–	1,200 00	23,000 00	26,000 00	26,000 00
Norwell,	2,184 73	971 01	1,473 88	2,569 59	4,219 13	1,486 75	153 24	39 40	–	4,907 56	5,229 54	2,960 63
Pembroke,	1,200 00	1,500 00	2,895 55	2,017 00	1,864 00	–	1,994 00	250 00	70 27	5,211 00	3,614 00	2,965 82
Plymouth,	23,640 97	22,545 64	22,663 75	20,671 07	21,540 00	9,610 34	–	–	–	44,312 04	44,085 64	32,274 09
Plympton,	463 09	588 36	1,236 61	1,166 46	830 88	200 00	729 25	271 50	268 50	2,358 80	1,690 74	1,705 11
Rochester,	2,024 89	2,490 17	2,282 23	2,070 14	2,702 68	2,000 00	–	–	–	4,095 03	5,192 85	4,282 23
Rockland,	11,350 00	6,734 25	9,423 53	1,000 00	5,000 00	3,462 02	–	1,312 51	–	12,350 00	13,046 76	12,885 55
Scituate,	4,000 00	4,000 00	4,621 95	4,000 00	4,000 00	21,133 72	–	7,200 00	331 62	8,000 00	15,200 00	26,087 29
Wareham,	4,526 81	4,981 75	17,276 84	10,408 46	8,787 51	4,568 46	2,480 15	2,626 99	–	17,415 42	16,396 25	21,845 30
West Bridgewater,	2,000 00	2,000 00	3,790 82	–	–	–	200 00	200 00	200 00	2,200 00	2,200 00	3,990 82
Whitman,	10,066 57	10,938 14	10,125 30	–	3,130 78	4,134 57	–	600 00	–	10,066 57	14,668 92	14,259 87
Totals,	$207,152 95	$208,061 68	$216,035 10	$156,968 21	$127,718 27	$181,415 03	$9,454 96	$20,806 60	$9,040 61	$373,576 12	$356,586 55	$406,490 74
Suffolk County.												
Boston,	$99,683 35	$100,618 47	$833,616 89	$758,946 58	$935,088 40	$1,713,123 93	$139,875 73	$476,731 59	$657,485 29	$998,505 66	$1,512,438 46	$3,204,226 11
Chelsea,	8,430 00	5,917 00	7,105 00	5,002 00	5,439 00	6,636 00	–	–	–	13,432 00	11,356 00	13,741 00
Revere,	13,000 00	15,000 00	21,721 72	–	20,375 00	–	–	300 00	–	13,000 00	35,675 00	21,721 72
Winthrop,	16,194 26	16,866 88	13,889 25	24,684 58	24,394 22	6,920 37	2,298 15	6,384 44	–	43,176 99	47,645 54	20,809 62
Totals,	$137,307 61	$138,402 35	$876,332 86	$788,633 16	$985,296 62	$1,726,680 30	$142,173 88	$483,416 03	$657,485 29	$1,068,114 65	$1,607,115 00	$3,260,498 45
Worcester County.												
Ashburnham,	$2,485 37	$2,002 52	$3,100 89	–	$766 01	–	$217 55	$206 43	$495 62	$2,702 92	$2,974 96	$3,596 51
Athol,	10,500 00	8,500 00	12,938 80	–	4,500 00	$54,000 00	–	–	–	10,500 00	13,000 00	66,938 80
Auburn,	2,761 88	4,360 96	2,000 00	–	–	–	–	–	–	2,761 88	4,360 96	2,000 00
Barre,	3,000 00	3,750 00	4,800 00	$1,500 00	2,100 00	8,971 17	500 00	500 00	150 00	5,000 00	6,350 00	13,921 17

Berlin,	1,969 56	1,732 79	1,837 72	800 00	1,200 00	1,200 00	–	–	–	2,769 56	2,932 79	3,037 72
Blackstone,	3,500 00	2,500 00	4,204 23	–	350 00	–	400 00	400 00	297 29	3,900 00	3,250 00	4,501 52
Bolton,	1,000 00	1,200 00	1,123 73	800 00	400 00	918 06	–	–	–	1,800 00	1,600 00	2,041 79
Boylston,	2,400 00	2,800 00	2,930 00	50 00	100 00	–	50 00	100 00	–	2,500 00	3,000 00	2,930 00
Brookfield,	2,100 00	1,800 00	1,800 00	–	–	160 00	–	–	800 00	2,100 00	1,800 00	2,760 00
Charlton,	3,800 00	4,100 00	950 00	–	–	3,849 72	–	–	2,301 78	3,800 00	4,100 00	7,101 50
Clinton,	20,000 00	22,500 00	25,841 08	–	–	3,000 00	–	–	–	20,000 00	22,500 00	28,841 08
Dana,	1,165 00	815 00	1,000 00	879 00	1,200 00	400 00	–	–	–	2,044 00	2,015 00	1,400 00
Douglas,	2,398 42	2,218 08	2,515 26	4,690 92	89 18	5,308 93	–	–	–	7,089 34	2,307 26	7,824 19
Dudley,	3,000 00	3,500 00	4,500 00	–	–	–	600 00	600 00	1,200 00	3,600 00	4,100 00	5,700 00
Fitchburg,	68,303 77	65,552 01	66,286 12	37,913 48	36,888 39	76,942 23	5,731 34	76,446 90	60,739 61	111,948 59	178,887 30	203,967 96
Gardner,	17,800 00	25,000 00	25,647 01	–	–	8,000 00	–	–	625 00	17,800 00	25,000 00	34,272 01
Grafton,	5,952 00	8,922 00	9,991 55	–	–	–	847 50	450 00	–	6,799 50	9,372 00	9,991 55
Hardwick,	3,182 20	4,976 98	3,860 85	–	–	1,000 00	859 91	–	–	4,042 11	4,976 98	4,860 85
Harvard,	2,172 00	2,237 00	2,450 00	1,023 00	1,800 00	1,400 00	–	–	–	3,195 00	4,037 00	3,850 00
Holden,	2,500 00	2,500 00	2,735 00	–	–	–	–	–	–	2,500 00	2,500 00	2,735 00
Hopedale,	6,000 00	7,000 00	7,202 64	12,590 00	1,000 00	7,247 00	–	5,350 00	–	18,590 00	13,350 00	14,449 64
Hubbardston,	2,000 00	2,000 00	3,636 30	–	500 00	1,000 00	–	–	–	2,000 00	2,500 00	4,636 30
Lancaster,	–	–	8,000 00	–	–	–	–	–	1,029 26	–	–	9,029 26
Leicester,	2,000 00	2,000 00	5,773 96	–	–	5,665 47	–	–	–	2,000 00	2,000 00	11,439 43
Leominster,	44,411 12	36,192 89	40,349 30	3,100 00	3,200 00	5,055 87	500 00	500 00	6,000 00	48,011 12	39,892 89	51,405 17
Lunenburg,	2,939 82	3,258 82	3,400 62	1,075 67	1,109 37	206 00	100 08	357 25	–	4,115 57	4,725 44	3,606 62
Mendon,	2,334 35	2,258 99	2,264 79	2,012 14	1,972 96	500 00	–	–	–	4,346 49	4,231 95	2,764 79
Milford,	13,747 06	17,011 47	15,495 60	–	–	–	–	–	–	13,747 06	17,011 47	15,495 60
Millbury,	4,413 77	4,511 84	4,668 45	3,000 00	6,623 74	–	298 70	942 83	865 96	7,712 47	12,078 41	5,534 41
New Braintree,	1,205 20	1,399 60	1,440 81	–	–	1,200 00	–	–	–	1,205 20	1,399 60	2,640 81
North Brookfield,	2,561 00	3,605 00	3,000 00	300 00	300 00	2,652 36	–	–	–	2,861 00	3,905 00	5,652 36
Northborough,	2,450 60	3,544 66	3,752 43	1,500 00	456 53	–	493 96	137 50	225 29	4,444 56	4,138 69	3,977 72
Northbridge,	5,482 54	6,650 34	8,871 24	–	4,006 50	–	1,165 01	1,188 30	–	6,647 55	11,845 14	8,871 24
Oakham,	1,281 33	1,383 64	1,566 59	–	–	386 61	–	–	–	1,281 33	1,383 64	1,953 20
Oxford,	2,568 17	2,550 00	3,500 00	400 00	350 00	620 00	–	80 00	30 00	2,968 17	2,980 00	4,150 00
Paxton,	900 00	675 00	1,000 00	–	–	–	–	–	–	900 00	675 00	1,000 00
Petersham,	2,148 55	2,716 27	3,268 37	97 86	7,214 42	4,018 15	115 06	423 39	–	2,361 47	10,354 08	7,286 52
Phillipston,	675 00	1,200 00	1,251 86	300 00	800 00	500 00	100 00	–	–	1,075 00	2,000 00	1,751 86
Princeton,	3,362 00	3,000 00	2,785 00	900 00	1,250 00	1,250 00	–	–	–	4,262 00	4,250 00	4,035 00
Royalston,	1,381 73	1,511 50	1,932 50	–	400 00	521 60	651 24	250 18	240 82	2,032 97	2,161 68	2,694 92
Rutland,	1,600 00	1,670 00	1,663 00	–	–	1,500 00	–	–	–	1,600 00	1,670 00	3,163 00
Shrewsbury,	2,617 99	3,228 23	3,734 70	1,699 29	1,001 16	997 47	232 49	461 74	596 45	4,549 77	4,691 13	5,328 62
Southborough,	5,289 39	6,695 81	6,389 87	–	585 55	879 59	–	389 00	–	5,289 39	7,670 36	7,269 46
Southbridge,	10,280 89	8,563 00	10,467 55	31,207 75	28,264 33	12,602 23	1,403 31	1,946 88	3,220 16	42,891 95	38,774 21	26,289 94
Spencer,	5,414 52	5,427 41	6,217 36	3,225 59	3,214 33	5,782 73	356 34	215 30	130 43	8,996 45	8,857 04	12,130 52
Sterling,	3,274 53	3,331 29	3,500 00	–	–	4,298 10	–	–	50 00	3,274 53	3,331 29	7,848 10
Sturbridge,	3,109 31	5,435 36	2,566 05	–	–	1,626 42	–	–	132 42	3,109 31	5,435 36	4,324 89

EXPENDITURES FOR HIGHWAY PURPOSES, NOT INCLUDING SIDEWALKS AND STREET LIGHTING, ETC. — *Concluded.*

CITY OR TOWN.	GENERAL.			CONSTRUCTION AND RESURFACING.			BRIDGES AND CULVERTS.			TOTALS.		
	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
Worcester County — Con.												
Sutton,	$3,000 00	$3,000 00	$3,135 67	–	–	–	–	–	–	$3,000 00	$3,000 00	$3,135 67
Templeton,	5,300 00	4,225 00	2,725 00	–	–	$1,434 36	–	–	–	5,300 00	4,225 00	4,159 36
Upton,	2,700 00	1,400 00	3,200 86	$700 00	$1,400 00	–	$100 00	$200 00	$300 00	3,500 00	3,000 00	3,500 86
Uxbridge,	4,641 48	5,226 51	5,894 43	2,290 68	50 71	3,315 50	871 10	3,341 70	975 79	7,803 26	8,618 92	10,185 72
Warren,	3,000 00	3,500 00	3,337 10	–	–	550 00	–	–	693 72	3,000 00	3,500 00	4,580 82
Webster,	7,000 00	8,000 00	8,000 00	9,600 00	12,930 00	6,200 00	100 00	100 00	200 00	16,700 00	21,030 00	14,400 00
West Boylston,	4,229 58	3,993 35	3,691 52	–	–	–	–	–	–	4,229 58	3,993 35	3,691 52
West Brookfield,	1,498 84	1,493 33	1,760 99	–	–	2,698 40	–	–	–	1,498 84	1,493 33	4,459 39
Westborough,	4,003 73	5,335 22	11,118 73	–	–	–	–	210 51	789 49	4,003 73	5,545 73	11,908 22
Westminster,	2,666 91	2,834 06	2,713 00	102 49	673 99	1,150 00	–	–	–	2,769 40	3,508 05	3,863 00
Winchendon,	5,500 00	5,500 00	6,989 84	2,500 00	–	6,147 72	500 00	500 00	858 29	8,500 00	6,000 00	13,995 85
Worcester,	60,180 62	44,327 52	72,129 38	230,338 72	227,916 79	87,298 86	7,101 43	12,440 11	2,460 35	297,620 77	284,684 42	161,888 59
Totals,	$397,160 23	$396,623 45	$462,907 75	$354,596 59	$354,613 96	$332,454 55	$23,295 02	$107,738 02	$85,407 73	$775,051 84	$858,975 43	$880,770 03

Expenditures for Highway Purposes, not including Sidewalks and Street Lighting (by Cities).

City.	General.			Construction and Resurfacing.			Bridges and Culverts.			Totals.		
	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
Attleboro,	$26,792 00	$33,230 00	$25,500 00	–	–	–	–	–	–	$26,792 00	$33,230 00	$25,500 00
Beverly,	32,048 54	31,205 85	31,866 06	$22,729 93	$38,726 44	$30,713 41	$1,600 00	$425 32	$49 88	56,378 47	70,357 61	71,629 35
Boston,	99,683 35	100,618 47	833,616 89	758,946 58	935,088 40	1,713,123 93	139,875 73	476,731 59	657,485 29	998,505 66	1,512,438 46	3,204,226 11
Brockton,	36,000 00	37,000 00	37,562 56	70,000 00	27,500 00	51,522 33	–	–	4,000 00	106,000 00	64,500 00	93,084 89
Cambridge,	32,000 00	35,000 00	35,000 00	139,527 50	175,000 00	156,000 00	26,500 00	28,812 00	11,450 00	198,027 50	238,812 00	202,450 00
Chelsea,	8,430 00	5,917 00	57,148 14	5,002 00	5,439 00	2,021 79	–	–	–	13,432 00	11,356 00	59,169 93
Chicopee,	21,532 29	19,717 99	23,325 30	15,215 37	15,829 53	12,136 34	236 94	7,572 63	9,687 44	36,984 60	43,120 15	45,149 08
Everett,	5,000 67	5,872 90	6,531 26	31,731 94	31,476 84	22,982 05	–	–	–	36,732 61	37,349 74	29,513 31
Fall River,	34,152 51	64,094 73	61,166 92	72,119 53	97,208 20	45,479 24	594 45	889 81	456 13	106,866 49	162,192 74	107,102 29
Fitchburg,	68,303 77	65,552 01	66,286 12	37,913 48	36,888 39	76,942 23	5,731 34	76,446 90	60,739 61	111,948 59	178,887 30	203,967 96
Gloucester,	40,925 17	41,960 02	40,000 00	9,299 13	11,513 96	4,000 00	2,455 02	3,561 88	3,234 58	52,679 32	57,035 86	47,234 58
Haverhill,	21,629 74	17,077 40	17,971 32	117,851 04	53,977 33	66,955 98	7,774 19	7,249 24	4,421 61	147,254 97	78,303 97	89,348 91
Holyoke,	51,190 95	61,384 07	57,003 95	64,607 75	21,270 04	106,228 35	–	–	–	115,798 70	82,654 11	163,232 30
Lawrence,	33,035 34	27,918 71	28,938 91	65,600 00	56,837 43	201,581 64	3,801 47	6,920 54	8,854 56	102,436 81	91,676 68	239,375 11
Lowell,	43,212 83	38,735 53	41,367 30	103,746 82	107,741 79	139,559 52	30,003 12	10,668 77	18,153 60	176,962 77	157,146 09	199,080 42
Lynn,	1,687 79	4,636 26	8,717 72	81,411 53	61,911 33	116,925 32	6,627 60	8,507 20	265 86	89,726 92	75,054 79	125,908 90
Malden,	57,212 00	58,285 00	55,487 00	15,326 00	15,484 00	57,126 00	5,128 00	1,101 00	3,524 00	77,666 00	74,779 00	116,137 00
Marlborough,	15,773 63	18,963 21	22,835 68	9,739 96	32,603 13	24,283 38	128 82	–	5,557 95	25,642 41	51,566 34	52,677 01
Medford,	40,236 04	46,002 50	47,925 79	–	3,005 85	5,267 38	233 32	527 31	299 27	40,469 36	49,535 66	53,492 44
Melrose,	3,361 75	3,221 61	14,922 56	17,262 24	14,004 23	25,134 35	376 44	79 53	130 85	21,000 43	17,305 37	40,187 76
New Bedford,	3,329 98	6,218 86	7,937 36	201,008 32	191,909 35	194,934 17	1,991 01	914 71	234 09	206,329 31	199,042 92	203,105 62
Newburyport,	15,000 00	12,000 00	5,373 53	–	–	9,685 89	–	–	3,236 33	15,000 00	12,000 00	18,295 75
Newton,	43,924 00	34,917 00	48,990 00	18,367 00	36,075 00	41,110 00	–	–	–	62,291 00	70,992 00	90,100 00
North Adams,	7,200 56	7,753 09	15,251 69	7,184 55	7,526 33	11,057 75	1,186 55	2,237 79	1,580 82	15,571 66	17,517 21	27,890 26
Northampton,	12,830 31	15,209 78	13,803 35	5,204 30	5,915 03	7,017 90	691 95	1,297 70	1,297 70	18,726 56	22,422 51	22,118 95
Pittsfield,	26,439 15	30,263 92	58,123 07	24,131 38	48,380 49	135,714 96	16,692 04	6,296 92	17,345 26	67,262 57	84,941 33	211,183 29
Quincy,	25,000 00	45,000 00	47,591 33	78,728 00	7,500 00	24,411 04	2,500 00	3,000 00	–	106,228 00	55,500 00	72,002 37
Revere,	13,000 00	15,000 00	21,721 72	–	20,375 00	–	–	300 00	–	13,000 00	35,675 00	21,721 72
Salem,	3,175 83	2,715 30	44,182 94	11,229 90	15,113 50	17,820 80	832 95	874 11	–	15,238 68	18,702 91	62,003 74
Somerville,	10,256 81	11,306 01	22,489 60	9,588 86	8,312 03	2,405 34	48,739 97	50,273 88	37,441 67	68,585 64	69,891 92	62,336 61
Springfield,	153,450 00	144,100 00	54,228 50	121,600 00	134,315 00	345,596 76	2,800 00	16,403 00	10,749 04	277,850 00	294,818 00	410,574 30
Taunton,	37,901 93	40,139 52	44,762 89	29,494 46	42,967 64	36,695 28	2,024 95	7,414 99	2,508 98	69,421 34	90,522 15	83,967 15
Waltham,	27,320 30	31,670 39	25,575 65	1,322 04	9,863 13	13,265 93	12,191 95	64 40	1,417 41	40,834 29	41,597 92	40,258 99
Woburn,	1,749 99	1,869 55	19,342 21	12,543 51	9,666 68	17,949 93	683 97	699 03	–	14,977 47	12,235 26	37,292 14
Worcester,	60,180 62	44,327 52	72,129 38	230,338 72	227,916 79	87,298 86	7,101 43	12,440 11	2,460 35	297,620 77	284,684 42	161,888 59
Totals,	$1,113,467 85	$1,158,884 20	$2,014,676 70	$2,388,771 84	$2,507,341 86	$3,811,947 85	$328,503 21	$731,619 36	$866,582 28	$3,830,742 90	$4,397,845 42	$6,693,206 83

Summary of Expenditures for Highways, not including Sidewalks and Street Lighting (by Counties).

County.	General.			Construction and Resurfacing.			Bridges and Culverts.			Totals.		
	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.	1911.	1912.	1913.
Barnstable, . .	$66,387 82	$61,908 11	$68,460 06	$49,453 48	$55,018 76	$76,714 69	$4,675 55	$13,511 03	$13,416 86	$120,516 85	$130,437 90	$158,591 61
Berkshire, . .	111,975 34	128,772 95	197,993 21	51,692 81	119,531 59	211,723 39	29,806 58	30,761 79	34,934 80	193,474 73	279,066 33	444,651 40
Bristol, . . .	182,685 01	230,555 59	255,113 94	369,758 80	404,795 22	351,002 44	13,307 79	13,557 21	7,341 02	565,751 60	648,908 02	613,457 40
Dukes, . . .	3,980 50	5,227 73	8,030 94	4,373 22	5,491 19	3,100 72	659 33	475 08	905 12	9,013 05	11,194 00	12,036 78
Essex, . . .	313,285 09	371,721 49	389,918 05	430,113 38	319,409 17	537,419 03	27,752 71	32,087 35	27,027 06	771,151 18	723,218 01	954,364 14
Franklin, . .	54,923 77	72,065 96	93,505 91	6,423 97	28,450 68	16,456 27	4,862 94	16,924 52	30,828 81	66,210 68	117,441 16	140,790 99
Hampden, . .	285,146 88	291,628 07	212,187 70	317,949 32	299,354 30	556,504 56	11,917 83	41,387 80	32,147 21	615,014 03	632,370 17	800,839 47
Hampshire, . .	75,170 89	78,546 61	91,581 95	29,153 94	37,806 19	57,482 79	6,115 23	6,168 27	12,369 11	110,440 06	122,521 07	161,433 85
Middlesex, . .	527,673 70	554,314 00	626,721 20	444,857 91	551,503 66	701,787 22	137,173 22	131,349 92	102,473 83	1,109,704 83	1,237,167 58	1,430,982 25
Nantucket, . .	8,665 56	3,792 98	1,024 68	720 74	7,186 52	17,545 81	–	–	300 00	9,386 30	10,979 50	18,870 49
Norfolk, . .	241,219 66	265,032 12	435,243 57	199,870 27	193,545 77	190,213 29	11,366 58	22,731 84	12,620 56	452,456 51	481,309 73	638,077 42
Plymouth, . .	207,152 95	208,061 68	216,035 10	156,968 21	127,718 27	181,415 03	9,454 96	20,806 60	9,040 61	373,576 12	356,586 55	406,490 74
Suffolk, . .	137,307 61	138,402 35	876,332 86	788,633 16	985,296 62	1,726,680 30	142,173 83	483,416 03	657,485 29	1,068,114 65	1,607,115 00	3,260,498 45
Worcester, . .	397,160 23	396,623 45	462,907 75	354,596 59	354,613 96	332,454 55	23,295 02	107,738 02	85,407 73	775,051 84	858,975 43	880,770 03
Totals, . .	$2,612,735 01	$2,806,653 09	$3,935,056 92	$3,204,565 80	$3,489,721 90	$4,960,500 09	$422,561 62	$920,915 46	$1,026,298 01	$6,239,862 43	$7,217,290 45	$9,921,855 02

Appendix E.

Showing the Highways laid out or contracted for by the Massachusetts Highway Commission and Construction Expenditures to Dec. 1, 1914.

Town or City.	Year.	Roads laid out.			Length constructed (Miles).	Construction Expenditures to Dec. 1, 1914.
		From —	Direction.	Length (Miles).		
Abington,	1900-1-3,	Brockton line,	Easterly,	1.73	1.74	$49,220 89
Abington,	1905-7,	Holbrook line,	Easterly,	1.64	1.64	
Abington,	1911,	Weymouth line,	Southerly,	.95	.95	
Abington,	1913,	North Abington,	Southwesterly,	1.08	1.08	
Acton (Great Road),[1]	1899-1900-1-2,	Concord line to Littleton line,	Northwesterly,	3.71	3.71	82,948 14
Acton (Harvard Pike),	1901-7-12-13,	Boxborough line to Concord line,	Easterly,	3.97	3.97	
Acushnet,	1901-3,	Rochester line to Rochester line via Long Plain.	Westerly and northerly,	2.80	2.80	8,951 63
Acushnet,	1897,	Near Bedford line,	Northerly,	.61	.61	
Adams (Maple Grove),	1897,	Cheshire line,	Northerly,	.57	.57	24,398 58
Adams (Orchard Street),	1908,	Cheshire line,	Northerly,	1.46	1.46	
Agawam,	1903-4-6-7-9-11,	South end bridge to Connecticut line,	Southerly,	3.99	3.99	46,838 78
Amesbury,	1899-1901-3-4,	Merrimac line,	Easterly,	2.25	2.25	
Amesbury,	1906-7-12,	Salisbury line,	Westerly,	1.05	1.05	38,043 13
Amherst,	1901-4,	Hadley line,	Northeasterly,	.97	.97	
Amherst,	1913,	Pleasant Street,	Northwesterly,	.80	.80	22,818 82
Andover,	1895-6,	Lawrence line,	Southerly,	1.22	1.22	
Andover,	1897-9-1900-2-3,	North Reading line,	Northerly,	2.97	2.97	45,153 02
Ashburnham,	1911,	New Hampshire State line,	Southeasterly,	.67	.67	12,436 20
Ashby,	1894-5-6-7-8-9,	Fitchburg line to Ashby post office,	Northerly,	3.57	3.57	
Ashby,	1910-11-12,	Townsend line,	Southwesterly,	1.52	1.52	75,874 07
Ashfield,	1897-8,	One mile north of Ashfield post office,	Northerly,	1.61	1.61	35,282 05
Ashland,	1903,	Southborough line,	Easterly,	1.47	1.47	
Ashland,	1910,	Framingham line,	Southerly,	1.73	1.73	13,822 90

[1] Exclusive of 1,100 feet at railroad crossing.

SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE MASSACHUSETTS HIGHWAY COMMISSION, ETC. — *Continued.*

TOWN OR CITY.	Year.	ROADS LAID OUT.			Length constructed (Miles).	Construction Expenditures to Dec. 1, 1914.
		From —	Direction.	Length (Miles).		
Athol,	1895-6,	Orange line,	Easterly,	1.61	1.61	$40,047 45
Athol,	1902-3,	Phillipston line,	Northwesterly,	1.49	1.49	
Attleboro,	1900-1-3,	North Attleborough line to Rhode Island line.	Southwesterly,	2.65	2.65	20,722 11
Attleboro,	1909,	Norton line,	Northwesterly,	.74	.74	
Auburn,	1895-6-7-8-9-1901-3-4,	Worcester line to Oxford line,	Southwesterly,	5.28	5.28	70,089 83
Avon,	1914,	Brockton to Avon Square,	Northerly,	1.31	.65	1,254 71
Ayer,	1912,	Littleton line to Littleton line,	Southeasterly,	.13	.13	
Ayer,	1913,	Shirley line,	Southeasterly,	1.13	1.13	26,211 47
Ayer,	1914,	Southerly end of 1913 section,	Southeasterly,	.39	.35	
Barnstable (north),	1909,	Yarmouth line,	Westerly,	1.91	1.91	
Barnstable (north),	1899-1902-7-10-11,	Sandwich line,	Easterly,	5.49	5.49	
Barnstable (south),[1]	1897-1901,	Yarmouth line,	Westerly,	2.26	2.26	50,958 79
Barnstable (west),	1904,	Marstons Mills,	Southerly,	1.48	1.48	
Barnstable,	1914,	Sandwich line,	Southeasterly,	.04	.04	
Barre,	1897-9,	Ware River to Barre Common,	Northwesterly,	2.89	2.89	29,337 12
Becket,	1902-4-5-6-8,	Chester line,	Westerly,	5.56	5.56	
Becket,	1910,	Point on Becket-Lee Road,	– – –	.59	.59	164,530 01
Becket,	1912-13,	West Becket Cemetery to Lee line,	Northwesterly,	2.75	2.75	
Bedford,	1897-1902,	Lexington line,	Northwesterly,	1.07	1.07	22,145 82
Bedford,	1903-6,	Carlisle bridge,	Southeasterly,	.58	.58	
Belchertown,	1900-1-2-7-8,	Near depot,	Westerly,	2.35	2.35	31,780 03
Belchertown,	1914,	Westerly end of 1907 section to Granby line,	– – –	.87	.80	
Bellingham,	1902-5,	Blackstone line,	Northeasterly,	.55	.55	22,866 35
Bellingham,	1904-5-6,	Franklin line to Mendon line,	Westerly,	2.63	2.63	
Berkley,	1906-13,	Lakeville line to Taunton line,	Northwesterly,	1.26	1.26	11,392 50
Bernardston,[2]	1911,	Fales River to Gill line,	Easterly,	2.70	2.70	11,476 78
Beverly,	1895-7-8,	Wenham line,	Southerly,	2.01	2.01	34,165 31
Beverly,	1905-6,	Manchester line,	Southwesterly,	3.67	3.67	
Billerica,	1908,	Near "Common,"	Southeasterly,	.58	.58	7,132 37
Blackstone,[3]	1899-1900-2-9,	Uxbridge line to Woonsocket line,	Southeasterly,	3.67	3.67	54,039 20
Blackstone,	1905,	Bellingham line to Woonsocket line,	Southwesterly,	.06	.06	
Boston,	1908,	Dedham line to Lagrange Street,	Northwesterly,	1.40	1.40	133,592 53

Bourne,	1897-8-1904,	Cohasset Narrows,	Easterly,	2.09	2.09		
Bourne,	1914,	Southerly end of 1913 section on Plymouth Road.	Southerly,	.78	.78		
Bourne,[4]	1903-5-7-10-11,	Back River bridge,	Falmouth line,	5.30	5.30	93,262	23
Bourne,	1913,	Plymouth line,	Southeasterly,	1.40	1.40		
Bourne,	1914,	Easterly end of 1914 section,	Easterly,	2.39	2.25		
Boxborough,	1897-9-1905-7,	Acton line to Harvard line,	Northwesterly,	3.31	3.31	20,568	34
Braintree,	1900-2,	Quincy line to Fore River,	Southeasterly,	1.06	1.06	14,798	70
Brewster,	1895-6-7-1901,	Dennis line to Orleans line,	Easterly,	7.78	7.78		
Brewster,	1908,	Orleans line to Chatham line,	Southerly,	.04	.04	31,054	52
Bridgewater,	1904-5-6-7-8,	Taunton River,	Northwesterly,	3.47	3.47	25,481	79
Brimfield,	1897-9,	Monson line,	Southerly,	2.34	2.34		
Brimfield,	1901-2,	Wales line,	Northerly,	1.63	1.63	24,918	21
Brockton,	1897-8-9,	Easton line,	Easterly,	1.87	1.87		
Brockton,	1900,	Abington line,	Westerly,	.66	.66		
Brockton,	1904,	West Bridgewater line,	Northerly,	.66	.66	40,323	15
Brockton,	1914,	Stoughton line,	Southeasterly,	.60	.60		
Brookfield,	1897-8-1900-2-3-4,	West Brookfield line to Brookfield village,	Easterly,	3.12	3.12		
Brookfield,	1905-7,	Spencer line,	Southwesterly,	.77	.77	54,577	78
Brookfield,	1912,	North Brookfield line to railroad,	Southerly,	.74	.74		
Buckland,	1894-5-6-7-8-1900-3-7,	Shelburne Falls station,	Westerly and southerly,	4.28	4.28		
Buckland,	1913,	Scott's bridge,	Southeasterly,	.02	.02	66,933	85
Burlington,	1903-4-5-6,	Woburn line to Billerica line,	Northwesterly,	3.80	3.80	34,809	50
Canton,	1905-6-7-8,	Stoughton line,	Northerly,	3.23	3.23	25,555	28
Charlemont,	1897-8-9-1913,	Deerfield River bridge,	Easterly and southeasterly,	.77	.77		
Charlemont,	1912,	Point on West Road,	Southerly,	.15	.15		
Charlemont,	1913,	Scott's bridge,	Northwesterly,	.30	.30	68,458	14
Charlemont,	1914,	End of 1913 layout,	Northwesterly,	.16	.13		
Charlemont,	1914,	Savoy line,	Easterly and southerly,	2.66	2.50		
Charlton,	1901-2,	Charlton Depot to Charlton City,	Southerly,	1.91	1.91		
Charlton,	1905-6-7-10-11-12,	Oxford line to Charlton City,	Southwesterly,	4.84	4.84		
Charlton,	1909-13,	Near Charlton City to Southbridge Street,	Southerly and southwesterly,	1.16	1.16	97,132	84
Charlton,	1914,	End of 1913 section,	Southwesterly,	1.10	1.10		
Chatham,	1899-1901-2-5-6,	Depot Street to Harwich line,	Westerly,	4.04	4.04		
Chatham,	1907,	Depot Street to Harwich line,	Northwesterly,	3.13	3.13	45,822	25
Chelmsford,[5]	1898-1901-7-10,	Lowell line to Tyngsborough line,	Westerly and northerly,	2.42	2.42		
Chelmsford,	1903-4,	Lowell line towards Chelmsford Center,	Southwesterly,	1.27	1.27	57,023	34
Chemlsford,	1908-11,	Westford line,	Northeasterly,	2.52	2.52		
Chelsea,	1901-4,	Lewis Street and Eastern Avenue,	Southwesterly,	.96	.96	25,382	66
Cheshire,	1899-1900-1-2-10-13,	Lanesborough line,	Northeasterly,	5.68	5.68		
Cheshire,	1914,	End of 1913 section to Adams line,	Northerly,	.97	.85	94,013	42

[1] Exclusive of 1,050 feet at railroad crossing.

[2] Exclusive of 143 feet at Boston & Maine bridge.

[3] Exclusive of 185 feet at the "trench."

[4] Exclusive of 275 feet at railroad crossing.

[5] Exclusive of 1,000 feet at railroad crossing.

SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE MASSACHUSETTS HIGHWAY COMMISSION, ETC. — *Continued.*

TOWN OR CITY.	Year.	ROADS LAID OUT.			Length constructed (Miles).	Construction Expenditures to Dec. 1, 1914.
		From —	Direction.	Length (Miles).		
Chester,	1899-1900-1-2-4-5-9-10-11,	Becket line to Huntington line,	Southeasterly,	6.62	6.62	$74,428 00
Chicopee,	1897-8-9,	Springfield line,	Northerly,	.92	.92	51,693 79
Chicopee,	1902-3-4-5-6-7,	Chicopee River,	Northerly,	2.97	2.97	
Chilmark,	1905-6-8-9-11,	West Tisbury line,	Southwesterly,	6.12	6.12	44,528 97
Chilmark,	1913,	Near Beetlebung Corner,	Southwesterly,	1.67	1.50	
Clarksburg,	1905-7,	North Adams line,	Northeasterly and northerly,	.97	.97	
Clarksburg,	1909,	Red Mill bridge,	Northerly,	.12	.12	16,039 18
Clarksburg,	1913,	Mountain Road,	– – –	.12	.12	
Cohasset,[1]	1897-8-1900,	Near Hingham line,	Easterly,	1.73	1.73	
Cohasset,	1902-3,	Beechwood Street to Scituate line,	Southerly,	.55	.55	16,371 66
Colrain,	1898-1901-5,	Shelburne line,	Northerly,	2.13	2.13	13,438 00
Concord,	1897-8,	Lincoln line,	Northwesterly,	1.47	1.47	
Concord,	1900-5-6,	Acton line, Great Road,	Southeasterly,	2.12	2.12	47,620 12
Concord,	1913,	Acton line, Harvard turnpike,	Southeasterly,	.60	.60	
Dalton,	1895-6-1903-4,	Pittsfield line,	Easterly,	2.56	2.56	30,555 67
Dartmouth,	1898-9-1900-1-3-5-13,	New Bedford line to Westport line,	Westerly,	4.74	4.74	38,384 92
Dedham,	1908,	Boston line,	Southerly,	.03	.03	
Dedham,	1913,	Westwood line,	Northeasterly,	.80	.80	40,421 80
Dedham,	1914,	Southerly end of bridge over Charles River,	Southerly,	1.26	1.20	
Deerfield,	1894-5,	South Deerfield to Sunderland bridge,	Southeasterly,	1.53	1.53	
Deerfield,	1900-1-2-3,	Cheapside bridge, Deerfield River,	Southerly,	1.44	1.44	89,961 89
Deerfield,[2]	1904-5-6-7-8-9-10-11-13,	Whately line to Deerfield village,	Northerly,	4.87	4.87	
Dennis (north),	1895-6-7-8,	Yarmouth line to Brewster line,	Northeasterly,	4.27	4.27	51,718 23
Dennis (south),	1900-1-2-4-6,	Bass River to Harwich line,	Easterly,	3.23	3.23	
Dighton (north),	1902-3,	Taunton line to Rehoboth line,	Easterly,	1.56	1.56	
Dighton (south),	1905-6-8-11-12,	Three Mill River bridge,	Southwesterly and southerly,	2.56	2.56	
Dighton (south),	1909-10,	Near Somerset line,	Northerly,	1.08	1.08	63,198 35
Dighton,[3]	1914,	Connecting 1910 and 1912 sections,	Southwesterly,	.89	.45	
Douglas,	1902-4,	Sutton line to Manchaug,	Southeasterly,	1.59	1.59	19,982 31
Douglas,	1905,	Main Street,	Southeasterly,	.54	.54	
Dover,	1905-7,	Charles River,	Westerly,	2.18	2.18	11,528 29
Dracut,	1905-6-7,	Near Lowell line on Methuen Road,	Northeasterly,	1.83	1.83	
Dracut,	1912,	Lowell line,	Northeasterly,	3.26	3.26	97,759 95
Dudley,	1902-4-6-7,	Near Webster line,	Southwesterly,	2.29	2.29	25,442 00
Duxbury,	1894-5-7-9-1903-5-8-9,	Marshfield line to Kingston line,	Southerly,	5.16	5.16	
Duxbury,	1914,	Pembroke line,	Southeasterly,	1.83	.60	38,198 76

Eastham,	1903-4-5-6-9,	Wellfleet line to Orleans line,	Southerly,	6.46	6.46	26,562 24
Easthampton,	1895-6,	Northampton line,	Southwesterly,	1.32	1.32	
Easthampton,	1900-1,	Mount Tom at Clark Street,	Northerly,	1.10	1.10	27,552 17
Easthampton,	1913,	Holyoke line,	Northwesterly,	.35	.35	
East Longmeadow,	1904-6-10,	Springfield line to village,	Southeasterly,	1.80	1.80	19,867 65
Easton,	1900,	Brockton line,	Southwesterly,	.80	.80	4,367 93
Edgartown,	1897-9-1900-1-2-3,	Oak Bluffs line,	Southerly,	2.42	2.42	17,478 26
Erving,	1898-9-1900-11-12,	Orange line,	Northwesterly,	2.86	2.86	
Erving,	1907-9-10,	Millers Falls,	Easterly,	3.26	3.26	105,333 23
Erving,	1914,	Connecting 1910 and 1911 sections,	Northwesterly and southeasterly,	2.00	1.90	
Essex,	1902-3,	Essex River,	Easterly and westerly,	.35	.35	25,630 77
Essex,	1912,	Gloucester line,	Westerly,	1.11	1.11	
Fairhaven,	1894-5,	Mattapoisett line,	Westerly,	1.45	1.45	14,366 53
Falmouth,	1904,	Bourne line to Woods Hole,	Southerly,	11.66	11.66	
Falmouth,	1905-6-7-8-9-10,	East Falmouth to Waquoit,	Easterly,	3.90	3.90	41,938 46
Fitchburg,	1894-5,	Westminster line,	Easterly,	.97	.97	
Fitchburg,	1897,	Lunenburg line,	Westerly,	.60	.60	51,124 34
Fitchburg,	1900-1-3-4,	Ashby line,	Southerly,	2.55	2.55	
Florida,	1913,	Savoy line,	Easterly,	.03	.03	122,477 03
Florida,	1914,	North Adams line,	Southeasterly,	7.21	7.00	
Foxborough,	1905-8,	Wrentham line,	Southeasterly,	1.70	1.70	19,537 02
Foxborough,	1901-2,	Mansfield line,	Northerly,	1.81	1.81	
Framingham,	1904-5,	Southborough line, Pleasant Street,	Southeasterly,	2.42	2.42	17,261 67
Framingham,	1910,	Ashland line, Hollis Street,	Northerly,	.79	.79	
Franklin,	1905-7-10,	Bellingham line,	Northeasterly,	2.58	2.58	29,713 89
Franklin,	1911,	Wrentham line,	Northwesterly,	1.18	1.18	
Freetown,	1902-3,	New Bedford line to Lakeville line,	Northerly,	3.19	3.19	18,524 71
Freetown,	1908,	Fall River line to Assonet,	Northeasterly,	.68	.68	
Gardner,	1897-8,	Templeton line,	Easterly,	2.38	2.38	44,487 05
Gardner,	1900-1,	Westminster line,	Northwesterly,	.98	.98	
Gay Head,	1913,	Chilmark line,	Northwesterly,	3.14	3.00	5,702 62
Gill,	1912,	Bernardston line to Northfield line,	Easterly,	.28	.28	4,522 20
Gloucester,	1894-5-8-1905-6-7,	Manchester line to "Cut bridge,"	Northerly,	3.46	3.46	47,961 90
Gloucester,	1907,	Rockport line,	Southerly,	.52	.52	
Goshen,	1894-5-8,	Williamsburg line,	Northwesterly,	2.46	2.46	46,440 20
Grafton,	1897-9-1900-5-12-13,	Millbury line,	Southerly and southeasterly,	5.05	5.05	52,459 00
Grafton,	1914,	Southerly end of 1913 section,	Southeasterly,	.62	.55	–
Granby,	1894-1902-5-6-8,	South Hadley line,	Easterly,	2.26	2.26	
Granby,	1911-13,	North Street,	Easterly and southeasterly,	2.60	2.60	66,405 57
Granby,	1914,	Easterly end of 1913 section,	Easterly,	.61	.55	
Great Barrington,	1894-6-7-1902,	Housatonic River bridge,	Easterly,	3.41	3.41	44,962 68

[1] Exclusive of 800 feet at railroad crossing.

[2] Exclusive of 6,243 feet at railroad crossing.

[3] Exclusive of 120 feet at railroad crossing.

SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE MASSACHUSETTS HIGHWAY COMMISSION, ETC. — *Continued.*

TOWN OR CITY.	Year.	ROADS LAID OUT.			Length constructed (Miles).	Construction Expenditures to Dec. 1, 1914.
		From —	Direction.	Length (Miles).		
Greenfield,[1]	1899-1900-2,	Washington Street,	Easterly,	1.33	1.33	$43,610 11
Greenfield,	1903-6-7-8-10,	Bernardston line,	Southwesterly,	3.77	3.77	
Greenfield,	1905,	Point on Colrain Road,	Northerly,	.26	.26	
Greenfield,	1914,	Connecting 1899 and 1900 sections,	– –	.09	–	
Groton,	1901-2-7,	Pepperell line,	Southeasterly,	1.41	1.41	26,264 24
Groton,	1914,	Pepperell line,	Northwesterly,	.11	.05	
Groveland,	1900-1-2-5,	Merrimac River bridge to West Newbury line.	Northeasterly,	1.72	1.72	22,613 35
Hadley,	1894-1904,	Connecticut River to Amherst line,	Easterly,	4.69	4.69	73,387 00
Hamilton,	1899-1900,	Ipswich line,	Southwesterly,	1.44	1.44	25,771 20
Hamilton,	1909-10,	Wenham line,	Northeasterly,	1.22	1.22	
Hancock,	1895-6-8-9,	Pittsfield line to New York State line,	Westerly,	3.23	3.23	51,932 09
Hanover,	1906-8,	Pembroke line,	Northwesterly,	1.85	1.85	9,041 43
Hardwick,	1897-1901,	New Braintree line,	Northerly,	.82	.82	25,840 06
Harvard,	1900-5-10,	Boxborough line to Harvard Common,	Westerly,	2.31	2.31	29,361 41
Harwich,	1899-1900-1-2-3,	Dennis line to Chatham line,	Easterly,	5.10	5.10	33,725 47
Harwich,	1908,	Chatham line to Brewster line,	Northerly,	1.38	1.38	
Hatfield,	1901-6-8-9-10-11,	Northampton line to Whately line,	Northerly,	3.54	3.54	52,102 14
Haverhill,	1902-7-10,	Kenoza Road to Merrimac line,	Easterly,	2.66	2.66	
Haverhill,	1899,	River and Maxwell Street to Methuen line,	Westerly,	2.63	2.63	83,475 14
Haverhill,	1912,	North Andover line,	Northeasterly,	.43	.43	
Hingham,	1894,	Weymouth Back River,	Easterly,	1.42	1.42	16,397 83
Hingham,	1896-7,	Near Cohasset line,	Westerly,	1.24	1.24	
Hinsdale,	1901-2-3,	Dalton line,	Southeasterly,	1.02	1.02	13,488 38
Holbrook,	1894-6-1902,	Weymouth line,	Northwesterly,	1.75	1.75	15,373 19
Holden,	1898-1900-8,	Worcester line to Jefferson village,	Northwesterly,	4.21	4.21	51,235 95
Holden,	1905,	Rutland line,	Easterly,	.52	.52	
Holliston,	1906-7-10,	Milford line,	Northeasterly,	3.32	3.32	45,213 45
Holliston,	1911-12,	Ashland line,	Southerly,	1.61	1.61	
Holyoke,	1905-6-10,	Easthampton line,	Southerly,	4.17	4.17	22,648 94
Hudson,	1906-7,	Brigham Street to Marlborough line,	Southerly,	1.14	1.14	8,142 03
Huntington,	1895-6,	Russell line,	Westerly,	1.01	1.01	28,076 28
Huntington,	1903-6-9,	Chester line,	Southeasterly,	1.25	1.25	
Ipswich,	1907-8-9,	Hamilton line to Ipswich Common,	Northerly,	2.13	2.13	40,569 54
Ipswich,[2]	1910-11,	Rowley line,	Southerly,	2.29	2.29	
Kingston,	1905-6,	Duxbury line,	Southerly,	1.02	1.02	7,362 67

Lakeville,	1901–2,	Near Middleborough line,	Southwesterly,	3.57	3.57	55,948	15
Lakeville,	1910–11–12,	Freetown line to Berkley line,	Northwesterly,	4.79	4.79		
Lancaster,[3]	1902,	Clinton line to Sterling line,	Northerly,	1.25	1.25	7,342	74
Lanesborough,[4]	1911–12–13,	Cheshire line to Pittsfield line,	Southerly,	2.29	2.29	25,152	72
Lawrence,	1896,	Methuen line,	Northerly,	.27	.27	2,079	55
Lee,	1894–5–6–1908–9–12–13,	Lee Park to Becket line,	Easterly and southeasterly,	5.14	5.14		
Lee,	1900,	Lenox line to Lee village,	Southerly,	1.26	1.26	115,644	49
Lee,	1906,	Lenox line to Stockbridge Street,	Southerly,	1.03	1.03		
Lee (south),	1906,	Stockbridge line, Main Street,	Easterly,	.90	.90		
Leicester,[5]	1904–5–6–8–9,	Worcester line to Spencer line,	Westerly,	4.87	4.87	67,156	63
Lenox,	1899–1900–1,	Lee line to Lenox village, Walker Street,	Northerly,	2.28	2.28		
Lenox,	1904–5,	Pittsfield line to Lenox village,	Southerly,	3.18	3.18	39,110	09
Lenox,	1906,	Lee line to Lenox village, Kemble Street,	Northerly,	2.20	2.20		
Leominster,	1901–2,	Sterling line,	Northerly,	2.18	2.18	21,432	81
Lexington,	1895–6–7–8,	Massachusetts Avenue,	Westerly,	3.44	3.44		
Lexington,	1900,	Bedford line,	Southeasterly,	.85	.85	37,862	09
Lincoln,	1895–6–7,	Lexington line to Concord line,	Northwesterly,	2.06	2.06	16,883	77
Littleton,	1902–3–4,	Acton line, Great Road,	Northerly,	2.65	2.65		
Littleton,	1902,	Westford line to Great Road,	Southwesterly,	.32	.32	34,737	98
Littleton,	1912–13,	Ayer line,	Southeasterly,	1.63	1.63		
Lowell (boulevard),	1897,	Tyngsborough line,	Easterly,	.97	.97		
Lowell (Princeton Street),	1897–8,	Chelmsford line,	Easterly,	1.33	1.33	22,899	99
Lowell,	1900,	Tewksbury line,	Northwesterly,	.35	.35		
Lunenburg,	1898–9–1900–1–3–10–13,	Fitchburg line to Shirley line,	Easterly and southeasterly,	5.89	5.89	64,062	82
Lynn,	1898,	Saugus River to Sea Street,	Northeasterly,	.90	.90	140,944	06
Lynn,	1914,	Lynnfield line,	Southeasterly,	1.98	1.98		
Lynnfield,	1914,	Lynn line,	Westerly,	.03	.03	–	
Mansfield,	1901,	Foxborough line,	Southeasterly,	.72	.72	10,068	19
Mansfield,	1906,	Norton line,	Northerly,	.49	.49		
Marion,	1894–5–1911,	Marion village to Wareham line,	Northeasterly,	1.59	1.59		
Marion,	1897–9–1901–2,	Marion village to Mattapoisett line,	Westerly,	1.84	1.84		
Marion,	1903,	Marion village to Rochester line,	Northwesterly,	2.14	2.14	38,283	87
Marion,	1914,	Northerly end of 1897 section,	Northerly,	1.05	.90		
Marlborough (east),	1897–1902–3–4,	Sudbury line to Hosmer Street,	Westerly,	3.10	3.10		
Marlborough (west),	1897–99–1900–1,	Northborough line,	Easterly,	2.42	2.42	72,966	55
Marlborough,	1908–11,	Hudson line,	Southerly and southwesterly,	1.27	1.27		
Marshfield,	1894–1910,	Duxbury line to North River bridge,	Northwesterly,	8.28	8.28	54,423	40
Mattapoisett,	1894–5,	Fairhaven line,	Easterly,	1.16	1.16		
Mattapoisett,	1900–1–3,	Marion line,	Westerly,	2.05	2.05	24,528	57
Mashpee,	1911–12–13,	Falmouth line northerly,	Northeasterly,	4.61	4.61		
Mashpee,	1914,	End of 1913 section,	Southeasterly,	1.13	1.13	42,832	51

[1] Exclusive of 1,000 feet at railroad crossing.

[2] Exclusive of 67 feet at railroad crossing.

[3] Exclusive of 1,100 feet at railroad crossing.

[4] Exclusive of 1,280 feet at railroad crossing.

[5] Exclusive of portions through Leicester village.

SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE MASSACHUSETTS HIGHWAY COMMISSION, ETC. — *Continued.*

TOWN OR CITY.	Year.	ROADS LAID OUT.			Length constructed (Miles).	Construction Expenditures to Dec. 1, 1914.
		From —	Direction.	Length (Miles).		
Medford,	1907,	Somerville line via Mystic Avenue,	Northerly,	.86	.86	$30,974 24
Melrose,	1906,	Saugus line, Upham Street,	Westerly,	.40	.40	5,056 49
Merrimac,	1897-8-9-1910,	Haverhill line,	Easterly,	1.03	1.03	23,302 69
Merrimac,	1901-3,	Amesbury line,	Southwesterly,	1.20	1.20	
Methuen,	1896-1908,	Lawrence line to Haverhill line,	Northeasterly,	3.69	3.69	52,667 84
Methuen,	1912,	Dracut line,	Northeasterly,	1.19	1.19	
Middleborough,	1894-1903,	Nemasket River to Rochester line,	Southeasterly,	8.98	8.98	63,056 15
Middleborough,	1906-7-8,	Bridgewater line to railroad bridge,	Southerly,	3.47	3.47	
Middleton,	1912-13,	North Andover line,	Southeasterly,	1.43	1.43	44,574 19
Middleton,	1914,	Southeasterly end of 1913 section,	Southeasterly,	1.23	1.05	
Milford,	1904-5,	Hopedale line via West Street,	Southeasterly,	1.75	1.75	31,163 99
Milford,	1909-10,	Holliston line,	Southwesterly,	1.80	1.80	
Millbury,	1902,	Worcester line to Grafton line,	Southeasterly,	.78	.78	
Millbury,	1900-3-4,	Worcester line, Main Street,	Southerly,	1.61	1.61	28,157 11
Millbury,	1906,	Sutton line,	Northeasterly,	.59	.59	
Milton,[1]	1899-1900,	Neponset River at Granite bridge,	Southeasterly,	.87	.87	11,344 26
Monson,	1894,	Railroad bridge toward Palmer,	Northerly,	.93	.93	
Monson,	1901-5,	Palmer line to Brimfield line,	Southeasterly,	.39	.39	16,178 94
Monson,	1908,	Palmer line,	Easterly and westerly,	.29	.29	
Montague,	1898-9-1904-6-10,	Third Street, near L Street, Turners Falls,	Easterly,	4.05	4.05	52,031 60
Montague,	1905-9,	Connecticut River bridge,	Northeasterly,	1.68	1.68	
Nantucket,	1894-1903,	First milestone to Siasconset,	Easterly,	6.48	6.48	52,893 84
Natick,	1901,	Wellesley line to Lincoln Square,	Westerly,	1.14	1.14	21,575 15
Natick,	1903,	Sherborn line to Cemetery Street,	Easterly,	2.06	2.06	
Needham,	1901,	Newton line,	Westerly,	1.00	1.00	11,313 34
Needham,	1905,	Charles River bridge, Chestnut Street,	Northerly,	1.03	1.03	
New Braintree,	1897,	Hardwick line to Ware line,	Southerly,	.17	.17	3,944 07
New Braintree,	1903,	New Braintree village,	Northerly,	.23	.23	
Newbury,	1899-1906,	Newburyport line to Rowley line,	Southerly and southwesterly,	4.23	4.23	33,615 25
Newburyport,	1896-7-8,	West Newbury line,	Easterly,	1.75	1.75	15,708 26
Newburyport,	1913,	Bridge Street to River bridge,	Northerly,	.08	.08	
Newton,	1901,	Needham line,	Easterly,	1.03	1.03	6,554 87
Norfolk,	1895,	Walpole line to Wrentham line,	Southwesterly,	1.45	1.45	16,602 60

North Adams,	1894-6-7,	Williamstown line,	Easterly,	2.13	2.13		
North Adams,	1900-1-2-3,	Ashland Street bridge to Adams line,	Southerly,	2.35	2.35	84,006	00
North Adams,	1913,	Boundary between North Adams and Florida.	Northerly,	3.65	3.25		
North Andover,	1900-2-4,	Lawrence line,	Southeasterly,	1.90	1.90		
North Andover,	1907-10-11-12,	Osgood Park, Pleasant and Court Streets,	Northerly,	3.71	3.71	132,591	57
North Andover,	1913,	Andover Street,	Southeasterly,	1.99	1.99		
North Andover,	1914,	Southerly end of 1913 section,	Southeasterly,	1.14	1.00		
Northampton,	1894,	Hadley bridge,	Southwesterly,	.56	.56		
Northampton,	1897-8-9-1900-5	Easthampton line,	Northeasterly,	1.47	1.47	106,357	65
Northampton,	1912,	Easthampton line, River Road,	Northerly,	1.42	1.42		
Northampton,	1912,	Hatfield line, Laurel Park Road,	Southwesterly,	.84	.84		
North Attleborough,	1894-5-6-7-9,	Bruce Avenue to Attleborough line,	Southwesterly,	3.60	3.60	24,168	98
Northborough (east),	1897-8-1911,	Marlborough line,	Southwesterly,	1.80	1.80		
Northborough (west),	1900-2-4,	Shrewsbury line,	Easterly,	2.19	2.19	32,450	87
Northborough (south),	1897,	Westborough line,	Northwesterly,	.47	.47		
Northbridge,	1913,	Grafton line,	Southeasterly,	.78	.78		
Northbridge,	1914,	Southerly end of crossing of New York, New Haven & Hartford Railroad.	Southerly,	.46	.36	17,846	98
North Brookfield,	1905-6-7-8-10,	Brookfield line,	Northerly,	2.25	2.25	31,295	14
Northfield,	1901-2-12,	Bernardston line,	Northeasterly and easterly,	3.04	3.04	59,717	26
Northfield,	1912,	New Hampshire line to Pine Street,	Southerly,	1.24	1.24		
North Reading,	1897-8-1901-3-11,	Andover line to Reading line,	Southerly,	2.54	2.54	23,082	77
Norton,	1906,	Mansfield line,	Southerly,	.50	.50	9,945	55
Norton,	1908-9-11,	Attleborough line to railroad station,	Easterly,	4.19	4.19		
Norwood (south),	1897-9,	Walpole line,	Northerly,	1.03	1.03	19,802	53
Norwood (north),	1895-6,	Westwood line,	Southerly,	1.04	1.04		
Oak Bluffs,	1894-5-6,	Sengekontacket bridge,	Northerly,	2.37	2.37	20,929	85
Orange,	1894-5-7,	Athol line,	Westerly,	2.18	2.18	52,990	93
Orange,	1900-1-3-4-5,	Erving line,	Easterly,	2.62	2.62		
Orleans,	1900-1-4,	Brewster line to Eastham line,	Northeasterly,	1.98	1.98	20,347	96
Orleans,	1903-4-5,	Brewster line towards Shattuck's Corner,	Northerly and northwesterly,	2.72	2.72		
Oxford,	1906-7,	Auburn line,	Southwesterly,	.85	.85		
Oxford,	1908-9,	Charlton line,	Northeasterly,	1.34	1.34	41,234	81
Oxford,	1913,	Webster line,	Northeasterly,	.85	.85		
Oxford,	1914,	Northerly end of 1913 section,	Northeasterly,	.59	.59		
Palmer,	1899-1900-1-13,	Tennyville to Monson line,	Southeasterly and westerly,	2.64	2.64		
Palmer,	1905-8,	Near Quaboag River to Warren line,	Easterly,	5.29	5.29	129,196	83
Palmer,	1906-8-9,	Wilbraham line,	Easterly,	2.11	2.11		
Paxton,	1895-1902,	Worcester line,	Northwesterly,	3.60	3.60	48,202	62
Pembroke,	1905,	Hanover line,	Southerly,	.35	.35	2,943	64

[1] Exclusive of 1,000 feet at railroad crossing.

SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE MASSACHUSETTS HIGHWAY COMMISSION, ETC. — *Continued.*

TOWN OR CITY.	Year.	ROADS LAID OUT.			Length constructed (Miles).	Construction Expenditures to Dec. 1, 1914.
		From —	Direction.	Length (Miles).		
Pepperell,[1]	1907-10-11,	Nashua River bridge,	Northwesterly,	2.00	2.00	
Pepperell,	1914,	Northerly end of 1911 section to Groton line.	Northwesterly,	1.59	.80	$28,957 72
Phillipston,	1897-8-1902-4-9,	Athol line to Templeton line,	Easterly and northeasterly,	2.78	2.78	31,102 16
Pittsfield,	1894-8-1901-2-9-13,	Hancock line,	Easterly,	3.64	3.64	
Pittsfield,	1897-1906-7,	Dalton line,	Southwesterly,	2.37	2.37	108,006 57
Pittsfield,	1913,	Lanesborough line and Dalton Road,	Southerly,	1.47	1.47	
Plainville,	1894-5-1911,	Wrentham line to North Attleborough line,	Southerly,	2.30	2.30	6,075 98
Plymouth,	1894-1904,	Manomet village,	Northerly,	5.05	5.05	
Plymouth,	1907-10-11-13,	Manomet village,	Southerly,	6.92	6.92	122,075 57
Plymouth,	1914,	End of 1913 section to Bourne line,	Southerly,	1.35	1.35	
Princeton,	1897-1900-2-3,	Princeton Depot,	Easterly,	2.23	2.23	21,927 60
Provincetown,	1901-3,	Truro line to Allerton Street,	Westerly,	1.10	1.10	7,669 68
Quincy,	1899,	Chubbuck Street to Fore River bridge,	Southeasterly,	.49	.49	
Quincy,	1902-9,	Braintree line,	Northerly,	.95	.95	26,587 83
Quincy,	1904,	Randolph line to Milton line,	Northerly,	1.23	1.23	
Randolph,	1902-3-9,	Quincy line,	Southeasterly,	1.90	1.90	13,265 20
Raynham,	1901-2-3,	Taunton line, Dean Street,	Northeasterly,	1.48	1.48	
Raynham,	1912-13,	Southerly end of Hockamock Swamp,	Southerly and southwesterly,	2.68	2.68	43,036 97
Reading,	1899-1900,	Stoneham line,	Northerly,	1.07	1.07	
Reading,	1902-3,	North Reading line,	Southerly,	2.67	2.67	29,074 15
Rehoboth,	1895-1908,	Seekonk line to Dighton line,	Easterly,	6.03	6.03	
Rehoboth,	1912,	Swansea line to Seekonk line,	Northwesterly,	.51	.51	59,608 98
Revere,	1897-8,	Boston line,	Northeasterly,	.58	.58	
Revere,	1899-1913,	Saugus line,	Southwesterly,	1.11	1.11	294,193 78
Revere,	1913,	Point of Pines to Revere Street,	Southerly,	2.06	1.75	
Richmond,	1897-1907,	Railroad Station to Pittsfield line,	Northerly,	4.02	4.02	33,210 96
Rochester,	1903,	Marion line to Acushnet line,	Westerly,	5.27	5.27	
Rochester,	1909,	Middleborough line to Wareham line,	Southeasterly,	.90	.90	6,674 70
Rockland,	1902-5-6,	Abington line to Hanover line,	Easterly,	2.35	2.35	13,442 30
Rockport,	1902-6-10,	Gloucester line,	Northerly,	1.60	1.60	21,061 52
Rowley,	1905-7-8-9,	Newbury line,	Southwesterly,	2.90	2.90	
Rowley,	1911,	Ipswich line,	Northerly,	.74	.74	22,143 37
Russell,	1894-5-6-7-8-9,	Westfield line to Huntington line,	Northeasterly,	6.66	6.66	92,891 00
Rutland,	1904,	Holden line,	Northwesterly,	1.16	1.16	8,981 39

Salem,	1901–9,	Swampscott line,	Northeasterly,	1.40	1.40	42,314 09
Salem,	1914,	Lynn line,	Northeasterly,	1.91	1.50	
Salisbury,	1904–5–12,	Salisbury village to Newburyport bridge,	Southerly,	1.56	1.56	
Salisbury,	1910,	New Hampshire line to village,	Southerly,	2.41	2.41	
Salisbury,	1911–12,	Amesbury line,	Southeasterly,	1.74	1.74	79,150 70
Salisbury,	1913,	Salisbury Square to Salisbury Beach,	Southeasterly,	.76	.76	
Salisbury,	1914,	Easterly end of 1913 section,	Easterly,	1.41	1.25	
Sandwich,	1897–8–1900–2–10–12–13,	Barnstable line,	Westerly and northwesterly,	5.61	5.61	
Sandwich,	1913,	Bourne line,	Southeasterly,	1.51	1.51	61,964 98
Sandwich,	1914,	Mashpee line to Barnstable line,	Southeasterly,	.11	.11	
Saugus,	1899–1913,	Fox Hill bridge to Revere line,	Northeasterly and southerly,	1.64	1.64	
Saugus,	1906,	Melrose line,	Southeasterly,	.19	.19	47,399 98
Saugus,	1914,	End of 1906 section to Newburyport turnpike.	Southeasterly,	.67	.60	
Savoy,	1913,	Florida and Savoy at Cold River,	Southerly,	.04	.04	7,469 99
Savoy,	1914,	Florida line to Charlemont line,	– – –	1.76	1.73	
Scituate,	1894–1910,	Cohasset line to Marshfield line,	Southerly,	5.37	5.37	49,073 18
Seekonk,	1900–1–2–4,	Rehoboth line to Rhode Island line,	Westerly,	2.76	2.76	44,237 18
Seekonk,	1910–11–13,	Perry Avenue to Rehoboth line,	Southeasterly,	3.27	3.27	
Sharon,	1908,	Foxborough line,	Northeasterly,	.64	.64	4,849 32
Sheffield,	1912–13,	Connecticut line via Under Mountain Road.	Northeasterly,	3.14	3.14	
Sheffield,	1914,	Northerly end of 1913 section,	Northerly,	1.15	.45	34,523 81
Sheffield,	1914,	Connecticut line via Ashley Falls Road,	Northerly,	1.54	.40	
Shelburne,	1894–5–6,	Bridge Street to Colrain line,	Northeasterly,	2.16	2.16	24,034 54
Shirley,	1913,	Ayer line,	Westerly,	.64	.64	28,640 39
Shirley,	1914,	Westerly end of 1913 section,	Westerly and northwesterly,	2.98	1.54	
Shrewsbury,	1895–1904,	Worcester line to Northborough line,	Northeasterly,	4.86	4.86	48,948 67
Somerset,	1895–1910,	Slades Ferry bridge,	Northerly,	5.38	5.38	
Somerset,	1903–4–9,	Slades Ferry bridge to Swansea line,	Northeasterly,	2.40	2.40	67,652 07
Somerset,	1909,	Slades Ferry bridge, Brayton Avenue,	Northerly,	.22	.22	
Somerset,	1914,	Junction of Riverside and Brayton Avenue,	Westerly,	1.41	.70	
Somerville,	1908,	Medford line via Mystic Avenue,	Southeasterly,	1.16	1.16	
Somerville,	1914,	Junction of Middlesex and Mystic Avenues to Fellsway Boulevard.	Northerly,	.42	.10	37,892 54
Southampton,	1905–9,	Easthampton line,	Southerly,	.71	.71	13,948 99
Southborough,	1902–5,	Westborough line,	Easterly,	1.89	1.89	
Southborough,	1907,	Ashland line,	Westerly,	.65	.65	22,148 17
Southborough,	1909,	Framingham line,	Southwesterly,	1.15	1.15	
Southbridge,	1902,	Charlton line,	Southwesterly,	.91	.91	11,058 43
Southbridge,	1907,	Sturbridge line,	Easterly,	.45	.45	
South Hadley,	1895–7–8–9–1900,	Granby line to South Hadley Falls,	Southwesterly,	2.42	2.42	63,659 75
South Hadley,	1903–4–9–12,	South Hadley Falls to Granby line,	Northeasterly,	4.64	4.64	

[1] Exclusive of 600 feet at railroad crossing.

SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE MASSACHUSETTS HIGHWAY COMMISSION, ETC. — *Continued.*

TOWN OR CITY.	Year.	ROADS LAID OUT.			Length constructed (Miles).	Construction Expenditures to Dec. 1, 1914.
		From —	Direction.	Length (Miles).		
Spencer,	1897-1900-1,	Leicester line,	Westerly,	1.60	1.60	$45,013 36
Spencer,	1906-10-11,	Brookfield line to Seven Mile River bridge,	Easterly,	1.46	1.46	
Sterling,[1]	1897-8-1912,	Near town hall to Boylston line,	Southerly,	2.70	2.70	
Sterling,	1905-7-9,	Lancaster line,	Southwesterly,	1.84	1.84	
Sterling,	1914,	Southwesterly end of 1909 section,	Southwesterly,	.51	.45	106,050 93
Sterling,	1906-7,	Leominster line,	Southerly,	.56	.56	
Sterling,	1913,	Smith's Corner,	Northeasterly,	.70	.70	
Sterling,[3]	1914,	Northerly end of 1913 section,	Northeasterly,	1.79	1.60	
Stockbridge,	1905-9,	Lee line at South Lee,	Westerly,	1.06	1.06	23,500 43
Stockbridge,	1906,	Lee line at East Street,	Southwesterly,	2.24	2.24	
Stoneham,	1907-8,	South Street,	Northerly,	.57	.57	14,894 66
Stoneham,	1900-1,	Reading line,	Southerly,	1.01	1.01	
Stoughton,	1902-3,	Canton line to Lincoln Street,	Southerly,	1.16	1.16	
Stoughton,[2]	1904-5,	Easton line to Walnut Street,	Northerly,	2.14	2.14	29,255 73
Stoughton,	1914,	Brockton line, Park Street,	Northwesterly,	1.32	1.25	
Sturbridge,	1897-1903-4-7-9,	Southbridge line,	Northwesterly,	2.36	2.36	29,215 04
Sudbury,	1897-8-1900-1-2-3,	Marlborough line to Wayland line,	Easterly,	5.11	5.11	36,939 44
Sunderland,	1897-1903-4-5-7-9,	Connecting River bridge,	Southeasterly and southerly,	1.56	1.56	
Sunderland,	1913,	Amherst line,	Northwesterly,	.98	.98	51,110 74
Sunderland,	1914,	Connecting 1909 and 1913 sections,	Southeasterly,	1.44	1.44	
Sutton,	1899-1901-2,	Millbury line,	Southerly,	1.46	1.46	
Sutton,	1903-4,	Douglas line at Manchaug,	Northerly,	.82	.82	15,405 41
Swampscott,	1897-1900-1,	Salem line to Burrell Street,	Southwesterly,	1.49	1.49	29,433 53
Swansea,	1903-6-7-9-10-11-12,	Somerset line to Rehoboth line,	Northwesterly,	6.65	6.65	42,050 41
Taunton,	1895-6-8-9-1900-1,	Dighton line, Winthrop Street,	Easterly,	2.94	2.94	
Taunton,	1905-6-13,	Dighton line, Somerset Avenue,	Northeasterly,	1.33	1.33	
Taunton,	1907-13,	Berkley line,	Northwesterly,	1.93	1.93	85,157 83
Taunton,	1912,	Raynham line, Broadway,	Southerly,	1.73	1.73	
Taunton,	1914,	Lakeville line,	Westerly,	1.26	.75	
Templeton,	1899-1901-2-3,	Gardner line at Otter River,	Westerly,	2.00	2.00	
Templeton,	1905-6-7-8-9,	Phillipston line to Baldwinsville,	Northeasterly,	3.69	3.69	66,578 35
Tewksbury,	1900-1-2-3-4-5-6,	Lowell line to Wilmington line,	Southeasterly,	6.00	6.00	53,594 83
Tisbury,	1894,	Vineyard Haven to West Tisbury line,	Southwesterly,	1.93	1.93	14,611 70
Townsend,	1896-1911,	Groton line to Ashby line,	Westerly,	6.04	6.04	46,947 45
Truro,	1895-1906,	Wellfleet line via Kelley's Corner,	Northerly,	3.16	3.16	43,536 06
Tyngsborough,	1895-6,	Tyngsborough bridge to Lowell line,	Southeasterly,	2.95	2.95	
Tyngsborough,	1909-10-11-12-13,	New Hampshire line to Chelmsford line,	Southerly and northwesterly,	3.98	3.98	63,613 70

Uxbridge,	1897-8-1901-3-9-10,	Blackstone line to Blackstone River,	Northwesterly,	2.94	2.94		
Uxbridge,	1912,	Northbridge line to Mumford River bridge,	Southwesterly,	.36	.36	39,219	42
Uxbridge,	1914,	Southerly end of 1912 section,	Southerly,	.82	.69		
Wales,	1901,	Brimfield line,	Southwesterly,	1.04	1.04	3,963	17
Walpole (south),[3]	1894-5-7-1900-12,	Norfolk line,	Northeasterly,	3.06	3.06		
Walpole (north),	1897-8-1900-11,	Norwood line,	Southerly,	1.97	1.97	51,842	96
Ware,	1897-9-1900-3,	New Braintree line,	Southerly,	2.28	2.28		
Ware,	1909-10,	Junction of Palmer and Belchertown roads,	Northeasterly,	1.90	1.90	28,913	82
Wareham,	1896-1901-6-7-10,	Wewcantit River bridge to High Street,	Northeasterly,	2.20	2.20		
Wareham,	1898-1901-13,	Cohasset Narrows bridge,	Westerly and southwesterly,	1.98	1.98	68,602	53
Wareham,	1905-6-7-8,	Parker's Mills to Rochester line,	Northwesterly,	3.42	3.42		
Wareham,	1910,	Wareham Narrows bridge,	Easterly,	.88	.88		
Warren,	1896-7-8-1907-8,	Warren village to Palmer line,	Westerly,	2.68	2.68		
Warren,	1899-1900-1,	Warren village to West Brookfield line,	Easterly,	1.42	1.42	45,749	42
Watertown,	1895-6,	Waltham line,	Easterly,	.85	.85	13,066	99
Wayland,[4]	1897-1900-3,	Weston line to Sudbury line,	Westerly,	2.58	2.58	21,506	92
Webster,	1908-12,	Lake Street and Thompson Road to Connecticut line.	Southerly,	1.76	1.76	22,277	28
Webster,	1911,	Oxford line,	Southerly,	.84	.84		
Wellesley,	1901,	Natick line to Blossom Street,	Easterly,	1.18	1.18	6,849	11
Wellfleet,	1903-4-5-7,	Eastham line,	Northerly,	4.65	4.65	9,364	18
Wenham,	1897-1901-3,	Beverly line to Hamilton line,	Northerly,	1.76	1.76	13,178	53
Westborough,	1903-6,	Southborough line,	Southwesterly,	2.27	2.27	22,570	37
Westborough,	1897,	Northborough line,	Southeasterly,	.72	.72		
West Boylston,	1897-8,	Worcester line,	Northerly,	1.55	1.55	36,821	29
West Boylston,	1913,	Sterling line,	Southerly,	.89	.89		
West Bridgewater,	1900-1-2-4,	Brockton line to Bridgewater line,	Southerly,	3.16	3.16	16,425	39
West Brookfield,	1899,	Ware line to Ware line,	Southwesterly,	.15	.15		
West Brookfield,	1899-1900-1,	Brookfield line,	Northwesterly,	1.51	1.51	32,280	26
West Brookfield,	1905-13,	Warren line,	Easterly,	1.16	1.16		
Westfield,	1894-6-8-9,	West Springfield line,	Westerly,	2.22	2.22	46,019	84
Westfield,	1898-9-1900-1-2,	Russell line,	Easterly,	3.59	3.59		
Westford,	1902-13,	Littleton line to Chelmsford line,	Northerly and southwesterly,	4.15	4.15	14,422	98
Westford,	1903,	Minot's Corner to Westford village,	Northerly,	.80	.80		
Westminster,	1894-5-6-7-8-9,	Fitchburg line,	Southwesterly,	3.00	3.00	55,138	67
Westminster,	1903,	Gardner line,	Easterly,	2.25	2.25		
West Newbury,	1895-6-7-1903-4-5-6-9,	Newburyport line to Groveland line,	Westerly,	5.09	5.09	58,726	45
Weston,	1898-9,	Wayland line to near Stony Brook,	Easterly,	3.15	3.15	16,209	94
Westport,[5]	1894-6-7-8-1913,	Dartmouth line,	Westerly and southeasterly,	4.45	4.45	46,429	60
West Springfield,	1895-6,	Tatham Hill,	Easterly and westerly,	1.91	1.91	32,944	46
West Springfield,	1912,	Westfield line,	Easterly,	.79	.79		

[1] Exclusive of 220 feet at railroad bridge.

[2] Exclusive of 250 feet at railroad bridge.

[3] Exclusive of 175 feet at railroad bridge.

[4] Exclusive of 1,500 feet at railroad crossing and Concord River.

[5] See Dartmouth.

SHOWING THE HIGHWAYS LAID OUT OR CONTRACTED FOR BY THE MASSACHUSETTS HIGHWAY COMMISSION, ETC. — *Concluded.*

TOWN OR CITY.	Year.	Roads laid out.			Length constructed (Miles).	Construction Expenditures to Dec. 1, 1914.
		From —	Direction.	Length (Miles).		
West Tisbury,	1895-6-7-1904,	Tisbury line to Chilmark line,	Southwesterly,	5.35	5.35	$30,054 72
Westwood,	1899-1900-13,	Norwood line to Dedham line,	Northerly,	1.07	1.07	8,080 05
Weymouth,	1894,	Holbrook line to Abington line,	Easterly,	.25	.25	
Weymouth,	1895-6-7,	Fore River to Back River,	Easterly,	1.75	1.75	46,173 54
Weymouth,	1903-4-7-8-10,	Broad Street via Washington to Abington line.	Southerly,	4.94	4.94	
Whately,[1]	1899-1901-2-3-4-5-6,	Deerfield line to Hatfield line,	Southerly,	4.03	4.03	39,000 14
Whitman,	1894-5-6,	Brockton line,	Easterly,	1.70	1.70	
Whitman,	1913,	East Bridgewater line,	Northerly,	1.40	1.40	43,249 58
Whitman,	1914,	Northerly end of the 1896 section,	Northerly,	.90	.80	
Wilbraham,	1894-5-6-1901-3-4-13,	Springfield line to Palmer line,	Easterly,	5.07	5.07	54,888 68
Williamsburg,	1896-8-1901-3,	Goshen line,	Southeasterly,	2.65	2.65	34,688 22
Williamstown,	1907,	River Road from village,	Southerly,	.13	.13	
Williamstown,	1895-6-8-1903,	North Adams line,	Westerly,	1.48	1.48	35,062 03
Wilmington,[2]	1907-8-10-11,	Tewksbury line,	Southerly,	3.67	3.67	37,946 52
Winchendon,	1907,	Glen Allen Road via Maple Street,	Southwesterly,	1.35	1.35	
Winchendon,	1907,	Miller's River bridge, River Street,	Southwesterly,	.35	.35	9,323 30
Winchester,	1899-1900,	Arlington line to Woburn line,	Northeasterly,	1.96	1.96	15,197 52
Windsor,	1897-1902-3-13,	Cummington line,	Westerly,	2.59	2.59	
Windsor,	1906-7,	Cummington Road, Windsor post office,	Easterly,	.88	.88	43,480 17
Woburn,	1900-1-2,	Winchester line to Burlington line,	Northwesterly,	2.03	2.03	
Woburn,	1912,	Wilmington line,	Southwesterly,	.58	.58	26,920 62
Woburn,	1913,	North Main and Elm streets,	Southerly,	.40	.40	
Worcester,	1896-7,	Paxton line,	Southeasterly,	1.35	1.35	
Worcester,	1897-1903,	Holden line,	Southerly,	1.50	1.50	47,329 14
Worcester,	1900-5,	West Boylston line,	Southerly,	1.22	1.22	
Wrentham,	1899-1900-1,	Plainville line,	Northerly,	2.23	2.23	
Wrentham,	1897-8-1902,	Norfolk line,	Southeasterly,	1.86	1.86	
Wrentham,	1912-13,	Franklin line,	Southeasterly,	2.04	2.04	63,124 50
Wrentham,	1914,	Connecting 1901 and 1902 sections,	– – –	.85	.30	
Yarmouth (north),	1894-5-6,	Barnstable line to Dennis,	Easterly,	3.70	3.70	
Yarmouth (south),	1895-6-7,	Barnstable line to Bass River bridge,	Easterly,	5.09	5.09	38,110 64

[1] Exclusive of 375 feet at railroad crossing and 800 feet at railroad bridge.

[2] Exclusive of 300 feet at railroad bridge.

Appendix F.

Table showing Towns and Cities in which Work has been done during the Year 1914, and Resident Engineers on Such Work, together with Dates of Beginning and Ending.

Town or City.	County.	Layout.	Resident Engineer.	Date of Contract.	Date of Beginning, 1914.	Date of Ending, 1914.
Avon,	Norfolk,	1914,	E. P. Staples,	Sept. 15, 1914	Sept. 21	Sept. 26
Avon,	Norfolk,	1914,	Wm. K. Widger,	Sept. 15, 1914	Sept. 26	Oct. 24
Avon,	Norfolk,	1914,	Allan I. Dean,	Sept. 15, 1914	Oct. 24	Dec. 10
Ayer,	Middlesex,	1913,	Samuel Hobbs,	Aug. 12, 1913	Mar. 25	June 10
Ayer,	Middlesex,	1914,	Samuel Hobbs,	June 10, 1914	June 15	July 31
Barnstable,	Barnstable,	1914,	W. B. Hammersley,	Mar. 24, 1914	April 10	April 18
Barnstable,	Barnstable,	1914,	S. C. Foster,	Mar. 24, 1914	April 18	June 13
Barnstable,	Barnstable,	1914,	C. R. Mosher,	Mar. 24, 1914	June 13	June 17
Becket,	Berkshire,	Special,	Rueben Barker,	Oct. 6, 1914	Oct. 21	Nov. 20
Becket,	Berkshire,	Bridge,	G. N. Willis,	Aug. 26, 1914	Sept. 15	Sept. 19
Becket,	Berkshire,	Bridge,	Donald E. McIntire,	Aug. 26, 1914	Sept. 19	Dec. 19
Belchertown,	Hampshire,	1914,	E. O. Knight,	May 26, 1914	June 5	Oct. 22
Beverly,	Essex,	Surfacing,	E. J. Dahill,	May 7, 1914	May 18	July 31
Blackstone,	Worcester,	1913,	J. E. Lawrence,	Aug. 26, 1913	Mar. 13	Aug. 8
Blandford,	Hampden,	Chapter 525,	N. S. Thayer,	May 19, 1914	June 29	Nov. 21
Bourne,	Barnstable,	1914,	C. R. Mosher,	May 19, 1914	June 2	Oct. 30
Bourne,	Barnstable,	1914,	C. R. Mosher,	May 26, 1914	June 10	Aug. 6
Bourne,	Barnstable,	1913,	S. C. Foster,	Sept. 9, 1913	April 11	June 13
Brockton,	Plymouth,	1914,	H. C. Holden,	April 14, 1914	April 29	July 27
Brockton,	Plymouth,	Surfacing,	H. C. Holden,	May 13, 1914	June 3	Aug. 1
Buckland,	Franklin,	Surfacing,	L. R. Sellew,	Aug. 4, 1914	Sept. 22	Oct. 23
Charlemont,	Franklin,	1912,	W. G. Addis,	Sept. 10, 1912	June 1	July 30
Charlemont,	Franklin,	1913,	C. S. Tinkham,	Nov. 25, 1913	May 4	Sept. 21
Charlton,	Worcester,	1914,	N. R. Clark,	April 8, 1914	April 9	July 25
Cheshire,	Berkshire,	1913,	M. Butement,	Aug. 6, 1913	May 5	July 11
Cheshire,	Berkshire,	1913,	M. Butement,	Aug. 26, 1913	May 6	Oct. 3

TABLE SHOWING TOWNS AND CITIES IN WHICH WORK HAS BEEN DONE, ETC. — *Continued.*

TOWN OR CITY.	County.	Layout.	Resident Engineer.	Date of Contract.	Date of Beginning, 1914.	Date of Ending, 1914.
Cheshire,	Berkshire,	1913,	M. Butement,	Aug. 6, 1913	May 5	Aug. 15
Cheshire,	Berkshire,	1913,	M. Butement,	Aug. 26, 1913	May 4	Nov. 3
Cheshire,	Berkshire,	1914,	M. Butement,	May 19, 1914	June 17	Nov. 6
Chilmark,	Dukes,	1913,	C. R. Mosher,	Oct. 1, 1913	Jan. 1	April 25
Chilmark,	Dukes,	1913,	A. H. Briggs,	Oct. 1, 1913	April 25	Aug. 9
Chilmark,	Dukes,	1913,	C. R. Mosher,	Oct. 1, 1913	Aug. 9	Dec. 31
Clarksburg,	Berkshire,	1913,	W. G. Burns,	July 30, 1913	April 4	Oct. 31
Clarksburg,	Berkshire,	1913,	R. H. Hosford,	July 30, 1913	April 4	Oct. 31
Clarksburg,	Berkshire,	1913,	E. P. Staples,	July 30, 1913	April 28	May 18
Clarksburg,	Berkshire,	1913,	Carl H. Morrill,	July 30, 1913	May 18	Oct. 31
Clarksburg,	Berkshire,	1913,	E. M. Gray,	July 30, 1913	Sept. 28	Oct. 31
Clarksburg,	Berkshire,	1913,	R. E. Davis,	July 30, 1913	Sept. 28	Oct. 31
Dedham,	Norfolk,	1914,	A. L. Upham,	Aug. 5, 1914	Aug. 17	Dec. 15
Deerfield,	Franklin,	Surfacing,	L. R. Sellew,	April 14, 1914	April 14	May 23
Deerfield,	Franklin,	Surfacing,	L. R. Sellew,	April 28, 1914	June 13	July 25
Dighton,	Bristol,	1914,	Wm. K. Widger,	June 9, 1914	July 6	Aug. 13
Dighton,	Bristol,	1914,	H. S. Jewell,	June 9, 1914	Aug. 13	Dec. 18
Dighton,	Bristol,	Surfacing,	H. O. Parker,	Sept. 22, 1914	Sept. 28	Dec. 19
Dudley,	Worcester,	Special,	N. R. Clark,	Nov. 17, 1914	Nov. 30	Dec. 31
Duxbury,	Plymouth,	1914,	E. P. Staples,	Sept. 15, 1914	Sept. 28	Dec. 23
Erving,	Franklin,	1914,	E. N. Briggs,	April 28, 1914	May 12	Oct. 27
Fitchburg,	Worcester,	Surfacing,	E. N. Briggs,	May 13, 1914	Aug. 5	Sept. 2
Florida,	Berkshire,	1913,	R. H. Houston,	Aug. 27, 1913	May 6	Sept. 3
Florida,	Berkshire,	1912,	H. D. Phillips,	Sept. 10, 1912	Jan. 1	Oct. 23
Florida,	Berkshire,	1912,	Geo. H. Delano,	Sept. 10, 1912	April 30	Sept. 21
Florida,	Berkshire,	1912,	C. G. Raymond,	Sept. 10, 1912	April 30	Oct. 23
Florida,	Berkshire,	1912,	Eli H. Stricker,	Sept. 10, 1912	April 30	Aug. 15
Florida,	Berkshire,	1912,	Manley Guilford,	Sept. 10, 1912	May 7	Oct. 23
Freetown,	Bristol,	1914,	Allan I Dean,	June 23, 1914	July 21	Oct. 26
Grafton,	Worcester,	1914,	C. A. Welton,	May 19, 1914	May 26	Aug. 26
Granby,	Hampshire,	1914,	Edward O. Knight,	May 26, 1914	June 5	Oct. 22
Gay Head,	Dukes,	1913,	C. R. Mosher,	Oct. 1, 1913	Jan. 1	April 25
Gay Head,	Dukes,	1913,	A. H Briggs,	Oct 1, 1913	April 25	Aug. 9
Gay Head,	Dukes,	1913,	C. R. Mosher,	Oct. 1, 1913	Aug. 9	Dec. 31
Great Barrington,	Berkshire,	Surfacing,	Carl W. Sterl,	July 28, 1914	Aug. 10	Nov. 14
Groton,	Middlesex,	1914,	John E. Troy,	Sept. 9, 1914	Sept. 21	Dec. 12
Hadley,	Hampshire,	Surfacing,	L. R. Sellew,	April 28, 1914	May 2	June 11

Holden,	Worcester,	1914,	Eli H. Stricker,	Aug. 25, 1914	Sept. 28	Dec. 31	
Holden,	Worcester,	Surfacing,	Eli H. Stricker,	Sept. 9, 1914	Sept. 1	Nov. 18	
Lee,	Berkshire,	1913,	Austin E. Page,	Oct. 28, 1913	April 21	June 27	
Lee,	Berkshire,	1913,	Austin E. Page,	Oct. 28, 1913	April 21	June 29	
Marion,	Plymouth,	1914,	H. C. Holden,	May 12, 1914	June 6	June 13	
Marion,	Plymouth,	1914,	E. A. Armington,	May 12, 1914	June 13	Oct. 8	
Mashpee,	Barnstable,	1914,	W. P. Hammersley,	Mar. 24, 1914	April 10	April 18	
Mashpee,	Barnstable,	1914,	S. C. Foster,	Mar. 24, 1914	April 18	June 13	
Mashpee,	Barnstable,	1914,	C. R. Mosher,	Mar. 24, 1914	June 13	June 17	
Medford,	Middlesex,	Surfacing,	F. L. McLaughlin, Jr.,	May 7, 1914	May 11	July 18	
Middleton,	Essex,	1914,	Wm. J. Lumbert,	April 28, 1914	May 12	Dec. 31	
Montague,	Franklin,	Surfacing,	L. R. Sellew,	Nov. 3, 1914	Nov. 10	Nov. 28	
North Adams,	Berkshire,	1913,	W. G. Burns,	July 30, 1913	April 4	Oct. 31	
North Adams,	Berkshire,	1913,	R. H. Hosford,	July 30, 1913	April 4	Oct. 31	
North Adams,	Berkshire,	1913,	E. P. Staples,	July 30, 1913	April 28	May 18	
North Adams,	Berkshire,	1913,	Carl H. Morrill,	July 30, 1913	May 18	Oct. 31	
North Adams,	Berkshire,	1913,	E. M. Gray,	July 30, 1913	Sept. 28	Oct. 31	
North Adams,	Berkshire,	1913,	R. E. Davis,	July 30, 1913	Sept. 28	Oct. 31	
North Andover,	Essex,	1914,	M. J. Dalton,	June 16, 1914	July 6	Dec. 7	
North Andover,	Essex,	1914,	C. G. Richmond,	June 16, 1914	Sept. 5	Dec. 7	
Northbridge,	Worcester,	1914,	J. E. Lawrenee,	Aug. 4, 1914	Aug. 24	Nov. 16	
Northbridge,	Worcester,	1913,	C. A. Welton,	Sept. 25, 1913	April 2	June 13	
Northbridge,	Worcester,	1913,	C. A. Welton,	Sept. 25, 1913	April 4	June 13	
Oxford,	Worcester,	1914,	N. R. Clark,	April 28, 1914	May 1	June 20	
Peabody,	Essex,	Chapter 525,	Arthur L. Ford,	July 8, 1914	July 27	Oct. 31	
Pepperell,	Middlesex,	1914,	John E. Troy,	Sept. 9, 1914	Sept. 21	Dec. 12	
Phillipston,	Worcester,	Surfacing,	E. N. Briggs,	April 21, 1914	April 20	June 19	
Pittsfield,	Berkshire,	Surfacing,	Reuben Barker,	July 8, 1914	Aug. 4	Oct. 20	
Plymouth,	Plymouth,	1913,	A. H. Briggs,	Aug. 12, 1913	April 20	April 24	
Plymouth,	Plymouth,	1913,	C. R. Mosher,	Aug. 12, 1913	April 24	May 9	
Plymouth,	Plymouth,	1913,	R. W. Allen,	Aug. 12, 1913	May 9	Aug. 17	
Plymouth,	Plymouth,	1914,	C. R. Mosher,	Mar. 31, 1914	April 28	May 9	
Plymouth,	Plymouth,	1914,	R. W. Allen,	Mar. 31, 1914	May 9	Aug. 17	
Raynham,	Bristol,	1913,	H. S. Jewell,	Aug. 27, 1913	April 24	July 18	
Reading,	Middlesex,	Surfacing,	George N. Babson,	July 28, 1914	July 28	Nov. 7	
Rehoboth,	Bristol,	Surfacing,	Allan I. Dean,	April 28, 1914	May 4	July 17	
Revere,	Suffolk,	1913,	C. H. Restall,	Aug. 12, 1913	Jan. 1	Dec. 31	
Revere,	Suffolk,	1913,	J. P. King,	Aug. 12, 1913	Jan. 1	Dec. 8	
Revere,	Suffolk,	1913,	Osborn Palmer,	Aug. 12, 1913	Jan. 1	May 11	
Revere,	Suffolk,	1913,	Osborn Palmer,	Aug. 12, 1913	Sept. 5	Dec. 31	
Revere,	Suffolk,	1913,	G. P. Soutar,	Aug. 12, 1913	Mar. 3	Mar. 30	
Revere,	Suffolk,	1913,	W. R. Vittum,	Aug. 12, 1913	May 26	June 1	
Revere,	Suffolk,	1913,	E. J. Dahill,	Aug. 12, 1913	July 31	Aug. 24	
Revere,	Suffolk,	1913,	Hall Gleason,	Aug. 12, 1913	Oct. 8	Nov. 9	

TABLE SHOWING TOWNS AND CITIES IN WHICH WORK HAS BEEN DONE, ETC. — *Concluded.*

TOWN OR CITY.	County.	Layout.	Resident Engineer.	Date of Contract.	Date of Beginning, 1914.	Date of Ending, 1914.
Rutland,	Worcester,	Surfacing,	Eli P. Strieker,	Sept. 9, 1914	Sept. 1	Nov. 18
Salem,	Essex,	1914,	L. P. Henderson,	April 14, 1914	May 9	Dec. 31
Salisbury,	Essex,	1914,	Osborn Palmer,	May 6, 1914	May 11	Sept. 5
Salisbury,	Essex,	1914,	L. P. Henderson,	May 6, 1914	Sept. 5	Oct. 3
Salisbury,	Essex,	1914,	G. H. Delano,	May 6, 1914	Oct. 3	Dec. 31
Sandwich,	Barnstable,	1914,	W. P. Hammersley,	Mar. 24, 1914	April 10	April 18
Sandwich,	Barnstable,	1914,	S. C. Foster,	Mar. 24, 1914	April 18	June 13
Sandwich,	Barnstable,	1914,	C. R. Mosher,	Mar. 24, 1914	June 13	June 17
Saugus,	Essex,	1914,	L. P. Henderson,	Aug. 4, 1914	Aug. 18	Sept. 26
Saugus,	Essex,	1914,	E. J. Dahill,	Aug. 4, 1914	Sept. 26	Dec. 12
Savoy,	Berkshire,	1913,	R. H. Houston,	Aug. 27, 1913	May 6	Sept. 3
Seekonk,	Bristol,	Surfacing,	Allan I. Dean,	April 28, 1914	May 4	July 17
Seekonk,	Bristol,	Surfacing,	Allan I. Dean,	April 29, 1914	May 7	July 16
Sheffield,	Berkshire,	1914,	Carl W. Sterl,	Oct. 6, 1914	–	Oct. 28
Sheffield,	Berkshire,	1914,	G. N. Willis,	Oct. 6, 1914	Oct. 28	Dec. 12
Sheffield,	Berkshire,	1914,	W. J. Hurley,	Oct. 20, 1914	Oct. 29	Dec. 19
Shelburne,	Franklin,	Surfacing,	L. R. Sellew,	Aug. 4, 1914	Oct. 20	Nov. 19
Shirley,	Middlesex,	1913,	Samuel Hobbs,	Aug. 12, 1913	Mar. 25	June 10
Shirley,	Middlesex,	1914,	Samuel Hobbs,	May 5, 1914	May 14	Aug. 29
Shirley,	Middlesex,	1914,	A. P. Rice,	May 5, 1914	Aug. 29	Nov. 7
Shirley,	Middlesex,	1914,	A. L. Ford,	May 5, 1914	Nov. 7	Dec. 31
Somerset,	Bristol,	1914,	W. K. Widger,	Oct. 13, 1914	Nov. 2	Dec. 2
Somerville,	Middlesex,	1914,	W. J. Lumbert,	Sept. 8, 1914	Oct. 19	Nov. 7
Somerville,	Middlesex,	1914,	J. E. Lawrence,	Sept. 8, 1914	Nov. 7	Dec. 31
Sterling,	Worcester,	1914,	A. P. Rice,	May 6, 1914	May 25	Dec. 31
Sterling,	Worcester,	1914,	A. P. Rice,	May 6, 1914	May 25	Nov. 18
Stoneham,	Middlesex,	Surfacing,	George N. Babson,	July 28, 1914	July 28	Nov. 7
Stoughton,	Norfolk,	1914,	H. L. Jewell,	April 14, 1914	June 9	Aug. 15
Stoughton,	Norfolk,	1914,	W. K. Widger,	April 14, 1914	Aug. 15	Oct. 24
Stoughton,	Norfolk,	1914,	Allan I. Dean,	April 14, 1914	Oct. 24	Dec. 11
Sunderland,	Franklin,	Surfacing,	L. R. Sellew,	April 28, 1914	June 16	July 29
Sunderland,	Franklin,	1914,	L. R. Sellew,	April 14, 1914	April 18	June 26
Swampscott,	Essex,	Special,	R. W. Coburn,	Mar. 24, 1914	April 6	Dec. 31
Swampscott,	Essex,	Special,	C. G. Richmond,	Mar. 24, 1914	April 1	Sept. 5
Swampscott,	Essex,	Special,	H. W. Ingham,	Mar. 24, 1914	April 2	Dec. 31

Swampscott,	Essex,	Special,	F. T. McAvoy,	Mar. 24, 1914	April 1	Dec. 31
Swampscott,	Essex,	Special,	S. S. Neff,	Mar. 24, 1914	Sept. 25	Dec. 8
Taunton,	Bristol,	1914,	R. H. Briggs,	Aug. 18, 1914	Aug. 24	Nov. 17
Taunton,	Bristol,	Surfacing,	H. O. Parker,	Sept. 22, 1914	Sept. 28	Dec. 19
Uxbridge,	Worcester,	1914,	J. E. Lawrence,	Aug. 25, 1914	Aug. 31	Dec. 5
Uxbridge,	Worcester,	1914,	L. B. Hoyt,	Aug. 25, 1914	Aug. 31	Nov. 5
Wareham,	Plymouth,	1913,	F. V. Andrews,	Aug. 26, 1913	Jan. 1	Sept. 29
Wareham,	Plymouth,	1913,	H. E. Andrews,	Aug. 26, 1913	Jan. 1	Sept. 29
Wayland,	Middlesex,	Surfacing,	F. L. McLaughlin, Jr.,	June 15, 1914	June 30	Sept. 8
West Bridgewater,	Plymouth,	Surfacing,	H. C. Holden,	May 13, 1914	June 3	Aug. 1
Westfield,	Hampden,	Surfacing,	J. R. Wolff,	Aug. 26, 1914	Sept. 4	Nov. 10
Westport,	Bristol,	Surfacing,	H. O. Parker,	April 28, 1914	May 5	May 23
Westport,	Bristol,	Surfacing,	W. K. Widger,	April 28, 1914	May 23	Aug. 8
Westport,	Bristol,	Surfacing,	H. O. Parker,	April 28, 1914	Aug. 8	Sept. 9
Whitman,	Plymouth,	Surfacing,	W. M. Stodder,	Nov. 24, 1914	Oct. 5	Nov. 14
Whitman,	Plymouth,	1913,	W. M. Stodder,	Sept. 10, 1913	May 4	May 16
Whitman,	Plymouth,	1913,	E. P. Staples,	Sept. 10, 1913	May 16	Aug. 15
Whitman,	Plymouth,	1914,	W. M. Stodder,	July 29, 1914	Aug. 10	Sept. 19
Whitman,	Plymouth,	1914,	E. P. Staples,	July 29, 1914	Sept. 19	Sept. 26
Whitman,	Plymouth,	1914,	W. M. Stodder,	July 29, 1914	Sept. 26	Nov. 18
Whitman,	Plymouth,	1914,	Allan I. Dean,	July 29, 1914	Nov. 18	Dec. 10
Williamstown,	Berkshire,	Chapter 525,	A. E. Page,	July 8, 1914	July 16	Dec. 5
Windsor,	Berkshire,	1914,	R. A. Vesper,	June 23, 1914	June 25	Dec. 3
Windsor,	Berkshire,	1913,	R. A. Vesper,	Sept. 24, 1913	May 15	June 27
Wrentham,	Berkshire,	1914,	E. A. Armington,	Aug. 25, 1914	Oct. 5	Nov. 20

Appendix G.

Showing Contract Prices on

Town or City.	Contractor.	Bituminous Surfacing.		Excavation.			Concrete Masonry (Cubic Yard).
		Oil (Square Yard).	Tar (Square Yard).	All Kinds (Cubic Yard).	Borrow (Cubic Yard).	Ledge (Cubic Yard).	Portland Cement
Avon,	Town of Avon,	[1]$0 19	–	$0 50	$0 60	$2 00	$10 00
Ayer,	John H. Sweeney,	–	$0 11	62½	58	4 50	–
Becket,	Fred E. Ellis,	–	–	65	80	2 00	17 00
Becket,	Fred E. Ellis,	–	–	[5]1 50	–	–	[6]18 50
Beverly,	Lane Construction Corporation.	–	–	40	60	1 25	15 00
Beverly,	Richmond F. Hudson,	–	[1]903	80	[11]1 00	[12]1 50	–
Blandford,	Lane Construction Corporation.	04	–	60	1 00	1 50	12 00
Bourne,	Town of Bourne,	[1]406	[1]02½	50	–	2 00	12 00
Bourne,	Herbert L. Thomas,	30	–	40	55	01	10 00
Brockton,	City of Brockton,	–	42	50	60	2 00	13 00
Buckland,	Lane Construction Corporation.	–	–	60	–	–	–
Charlton,	Richmond F. Hudson,	–	[1]410	55	[19]1 00	55	10 00
Cheshire,	Cordner & Montague,	–	14	60	90	2 50	15 00
Dedham,	Andrew M. Cusack,	–	[1]19	60	70	2 00	10 00
Deerfield,	Lane Construction Corporation.	–	12	70	–	–	–
Deerfield,	Fred E. Ellis,	–	05	60	–	–	–
Dudley,	Framingham Contracting Company.	[2]290	04	35	35	1 50	15 00
Dighton,	Joseph McCormick,	–	215	60	67	6 50	19 10
Dudley (Taunton and Town of Dighton).	Thomas Whelan & Co.,	–	025	80	–	–	–
Duxbury,	David J. Sheehan,	[25]4 25	11	45	50	1 50	15 00
Egremont,	Framingham Contracting Company.	–	–	40	40	1 45	15 00
Erving,	Fred E. Ellis,	06	–	50	55	1 50	12 00
Fall River (painting Brightman Street bridge).	William R. West,	37 00	[26]70 00	–	–	–	–
Fitchburg,	Fred E. Ellis,	05	–	70	–	–	–
Freetown,	Zebulon L. Canedy,	04½	–	50	55	2 00	12 00
Grafton,	Horne-Lowe Contracting Company.	–	09	59	79	1 99	12 89
Granby and Belchertown,	Flynt Granite Company,	10	–	53	50	2 00	15 00
Great Barrington,	Steve W. Menaguale,	–	[1]406½	50	–	2 00	–
Hadley,	Fred E. Ellis,	–	05	60	[19]70	[12]1 20	–
Hardwick,	Horne-Lowe Contracting Company.	–	–	75	[19]80	[12]1 50	–
Holden,	Town of Holden,	–	07	60	70	2 00	13 50
Holden and Rutland,	Horne-Lowe Contracting Company.	025	07	60	70	[12]1 30	–
Lanesborough,	Ralph W. Emerson,	–	–	35	55	1 40	10 00
Lawrence,	City of Lawrence,	–	–	–	–	–	[26]15,000
Marion,	Luigi C. Carchia,	[3]015	–	60	75	3 00	8 00
Mansfield,	Powers Brothers,	–	[3]070	1 50	70	–	16 00

[1] Bermudez.
[2] Eight-inch.
[3] Fifteen-inch.
[4] Sand filling.
[5] Bridge excavation.
[6] Portland cement concrete masonry, 1, 2, 4.
[7] Rock embankment in place.
[8] Removing, cutting and replacing I beams.
[9] Sixteen-inch.
[10] Scarifying and reshaping.
[11] Cobblestone gutters relaid.
[12] Excavating, screening and replacing old broken stone.
[13] Pea stone.
[14] Per gallon.
[15] Guard rail rebuilt.
[16] Ten-inch.

Appendix G.

State Highways during 1914.

Broken Stone.		Pipe Culverts (per Lineal Foot).						Fencing (Lineal Foot).	Side Drains (Lineal Foot).	Stone Filling for Underdrains (per Cubic Yard).	Bounds (Each).	Catch-basins (Each).
		Clay.			Iron.							
Local (Ton).	Trap (Ton).	Twelve-inch.	Eighteen-inch.	Twenty-four-inch.	Twelve-inch.	Eighteen-inch.	Twenty-four-inch.					
$1 75	–	$0 80	[2]$0 55	[3]$1 25	–	–	–	$0 30	[4]$1 00	$0 75	$2 00	$30 00
–	$2 00	–	–	–	–	–	–	–	–	[47]5	2 50	–
–	–	–	–	–	–	–	–	35	–	–	–	–
[71] 50	–	–	–	–	[8]$4 00	–	–	–	–	–	–	–
1 60	–	–	–	–	1 25	$1 75	[9]$1 50	30	–	–	2 00	[51] 00
2 30	[132] 45	–	–	–	–	–	–	–	–	–	–	–
1 40	–	–	–	–	1 25	1 75	2 50	30	–	1 00	3 00	
2 00	–	–	–	–	–	–	–	30	[152]0	–	2 00	–
–	–	[16]60	[17]70	–	[16]1 50	–	–	30	–	[18]75	1 50	25 00
1 80	–	90	[2]50	–	–	–	–	30	–	1 15	2 00	–
–	2 30	–	–	–	–	–	–	–	–	–	–	–
1 60	–	70	1 50	–	–	–	2 00	30	–	90	2 00	[41] 00
–	2 40	–	–	–	1 30	1 75	–	35	–	1 25	2 00	[201] 25
1 95	–	65	1 00	[16]65	–	–	–	20	[213] 00	[19]80	60	35 00
–	2 30	–	–	–	–	–	–	–	–	[41] 00	–	–
–	2 35	–	–	–	–	–	–	–	–	[41] 00	–	–
–	–	70	–	–	1 25	–	–	30	–	70	–	–
1 73	[6]18 00	75	[16]65	[2]55	[19]90	[23]8 00	[8]7 50	30	[24]04	1 25	2 00	30 00
1 73	–	–	–	–	–	–	–	–	–	1 20	[47]0	–
1 70	–	[2]45	–	–	–	–	–	30	–	–	2 50	35 00
[19]85	[22]90	–	–	–	1 25	1 80	2 00	20	–	65	–	–
1 65	[9]1 50	–	–	–	–	2 00	–	28	–	–	1 50	[7]1 00
–	–	–	–	–	–	–	–	–	–	–	–	–
–	2 61	–	[11]65	–	–	[27]1 20	–	–	–	–	–	–
1 42	–	75	[16]65	[2]60	[3]85	–	–	32½	–	1 00	[19]85	40 00
1 59	–	69	[31] 19	[16]59	–	1 49	–	29	–	–	1 99	29 99
–	2 60	1 00	1 75	–	1 50	2 50	–	35	[4]90	1 25	2 00	[19]75
–	2 20	–	–	–	–	–	–	[27]1 20	–	–	–	–
–	2 27	–	–	–	–	–	–	–	–	–	–	–
–	2 30	–	–	–	–	–	–	–	–	1 10	–	–
1 60	–	80	–	–	–	[19]1 25	–	30	–	1 00	–	–
1 60	–	–	–	–	–	–	–	[41] 25	–	1 00	–	–
–	–	–	–	–	1 00	[31] 20	[28]1 40	[31]15	–	85	[29]80	–
–	–	–	–	–	–	–	–	–	–	–	–	–
1 75	–	1 00	–	–	2 00	[21] 50	[19]1 75	30	–	1 20	2 00	30 00
–	2 10	–	–	–	–	–	–	–	–	–	–	–

[17] Twelve-inch.
[18] Hardening for subgrade.
[19] Gravel borrow.
[20] Gravel filling.
[21] Curbstone inlets.
[22] Excavating and replacing old stone filling.
[23] Piles in place.
[24] Twenty-inch I beams.
[25] Cement rubble masonry.
[26] Lump sum.
[27] Sand for binding.
[28] Eighteen-inch.
[29] Borrow for surfacing.
[30] Asphalt.
[31] Rustic guard rail.

Showing Contract Prices on

TOWN OR CITY.	Contractor.	Bituminous Surfacing.		Excavation.			Con-
		Oil (Square Yard).	Tar (Square Yard).	All Kinds (Cubic Yard).	Borrow (Cubic Yard).	Ledge (Cubic Yard).	Portland Cement Masonry (Cubic Yard).
Mashpee-Sandwich and Barnstable.	Lane Quarry Company,	[1]$0 07	[2]$0 36	$0 45	$0 50	$1 00	$10 00
Medford,	Coleman Brothers,	–	–	–	–	–	–
Middleton,	John A. Gaffey,	[3]85	11	60	[6]63	2 00	12 00
Montague,	Lane Construction Company.	04	–	40	1 00	–	–
North Andover,	Crowe & Walsh,	–	[9]85	75	1 00	1 50	10 00
Northbridge,	Hassam Paving Company,	–	[9]58	77	70	1 75	10 00
Oxford,	Winthrop S. Allen,	–	–	[12]2 50	–	–	11 00
Oxford,	Horne-Lowe Contracting Company.	–	06	54	90	1 50	11 00
Peabody,	Timothy A. Moynihan,	–	21	48	70	2 00	12 00
Pepperell-Groton,	James E. Watkins,	[5]75	–	65	50	2 00	10 00
Phillipston,	Richmond F. Hudson,	–	10	60	–	[17]1 50	–
Pittsfield,	Lane Construction Company.	–	[19]18	65	85	[17]1 25	–
Plymouth,	Lane Quarry Company,	[20]50	[23]35	40	70	01	10 00
Provincetown,	Charles W. Snow,	–	–	–	–	–	–
Reading and Stoneham,	Rowe Contracting Company.	03	[22]15	50	90	[17]1 25	–
Rehoboth,	Herbert E. Cushing,	–	–	–	–	–	[24]1,135
Revere,	Boston Bridge Works,	12 05	[24]100 00	–	–	–	–
Salem,	Timothy A. Moynihan,	46	–	40	50	3 00	8 00
Salem,	Timothy A. Moynihan,	–	–	–	–	[6]65	[26]5 00
Salisbury,	Town of Salisbury,	04	–	60	65	2 00	16 00
Salisbury,	Town of Salisbury,	–	–	–	–	[6]1 00	–
Saugus,	Framingham Contracting Company.	–	25	52	59	2 00	10 50
Seekonk-Rehoboth,	Herbert E. Cushing,	–	02½	70	–	80	–
Seekonk,	Joseph McCormick,	–	02½	75	–	–	–
Sheffield,	B. Perini & Co.,	–	–	35	45	1 45	14 00
Sheffield,	Town of Sheffield,	–	–	60	70	2 00	10 00
Shelburne,	Lane Construction Corporation.	–	–	60	–	–	–
Shirley,	Antonio Carchia,	25	[26]4 50	40	55	3 00	16 00
Somerset,	Town of Somerset,	[32]03½	13	55	65	2 00	13 50
Somerville,	John A. Gaffey,	–	[9]75	53	80	50	–
Sterling,	Town of Sterling,	240	–	60	60	2 00	14 00
Stoughton,	Town of Stoughton,	–	30	55	60	2 00	12 00
Sudbury,	Doherty & Sweeney,	–	–	45	55	5 00	9 80
Sunderland,	Fred E. Ellis,	–	06	65	–	–	–
Sunderland,	Lane Construction Corporation.	–	–	60	60	2 00	14 00
Swampscott,	M. McDonough & Co.,	[35]3 00	60	50	[36]60	2 00	[30]12 00
Swampscott,	M. McDonough & Co.,	[51]1 50	–	–	[6]25	[38]6 00	[39]7 00
Taunton,	David J. Sheehan,	–	[9]77	50	50	10	5 00
Uxbridge,	Thomas J. Quinn,	[47]04	[5]65	48	95	1 50	12 50
Wayland,	Lane Construction Corporation.	[32]03	[48]18	50	75	[17]1 20	–

[1] Bituminous material for sealing coat.
[2] Sand and oil mixed.
[3] Eight-inch.
[4] All pea broken.
[5] Cobblestone gutters relaid.
[6] Gravel borrow.
[7] Twenty-inch.
[8] Ten-inch.
[9] Concrete surfacing.
[10] Extension of side drains in securing outlets, per lineal foot.
[11] Fifteen-inch.
[12] Including ledge.
[13] Gravel filling.
[14] Curbstone inlets.
[15] Eighteen-inch clay pipe.
[16] Borrow for surfacing.
[17] Excavating, screening and replacing old broken stone.
[18] Gravel, sand or stone screenings for binding.
[19] Bermudez.
[20] Sandy loam or clay borrow.
[21] Bulkhead, per lineal foot.
[22] Per gallon.
[23] Sand for sand and tar mixture, per cubic yard.
[24] Lump sum.

State Highways during 1914 — *Continued.*

Broken Stone.		Pipe Culverts (per Lineal Foot).						Fencing (Lineal Foot).	Side Drains (Lineal Foot).	Stone Filling for Underdrains (per Cubic Yard).	Bounds (Each).	Catch-basins (Each).
		Clay.			Iron.							
Local (Ton).	Trap (Ton).	Twelve-inch.	Eighteen-inch.	Twenty-four-inch.	Twelve-inch.	Eighteen-inch.	Twenty-four-inch.					
–	–	[3]$0 50	–	–	–	–	–	$0 35	–	–	$3 00	$35 00
[4]$1 70	$1 60	–	–	–	–	–	–	–	–	–	–	–
1 59	–	60	–	–	$2 00	[7]$4 50	[8]$2 00	33	–	–	2 00	35 00
–	1 95	–	–	–	–	–	–	–	–	–	–	–
2 00	–	75	–	–	[8]1 50	–	–	20	$0 45	[10]$0 20	2 00	30 00
–	–	1 10	[8]$1 00	[11]$1 25	–	–	–	30	–	–	2 25	70 00
–	–	–	–	–	–	–	–	–	–	–	–	–
–	2 24	70	[11]1 00	–	–	–	–	35	–	95	2 00	[13]90
–	1 49	72	[8]58	[11]95	–	[5]95	–	30	[14]10 00	–	2 00	25 00
–	–	90	[8]60	[11]1 00	[15]1 25	–	–	30	–	[16]75	2 00	30 00
1 70	[18]1 00	–	–	–	–	–	–	–	–	1 00	–	–
–	2 10	85	–	–	–	–	–	–	–	1 40	–	–
–	–	85	[3]60	–	–	–	–	30	–	–	2 00	30 00
–	–	–	–	–	–	–	–	–	–	[21]4 00	–	–
1 75	–	–	–	–	[23]1 25	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	–	–	–	–	–	–	–	–
–	–	–	–	–	[25]4 00	–	–	30	–	75	2 00	–
1 [26]67½	–	–	–	–	–	–	–	–	–	–	–	–
–	2 30	75	[8]70	–	–	–	–	30	–	–	2 00	30 00
–	–	–	–	–	–	–	–	–	–	–	–	–
–	1 75	3 00	–	–	1 85	1 55	–	30	12 00	75	2 00	35 00
1 65	[27]90	–	–	–	–	–	–	–	[28]80	1 25	–	–
1 68	[19]90	–	–	–	–	–	–	–	[28]80	1 25	–	–
–	–	70	1 00	[8]50	1 00	[23]1 30	[16]75	27	[8]75	70	2 00	–
–	–	–	–	–	1 00	1 50	1 75	30	–	1 00	2 00	[29]1 30
–	2 20	–	–	–	–	–	–	–	–	–	–	–
1 60	–	60	1 40	[8]50	2 00	–	[30]17 00	25	[31]2 00	1 25	2 00	30 00
1 65	[5]1 00	–	1 50	–	–	–	[17]1 50	30	–	1 10	2 00	30 00
–	–	75	[8]60	–	–	–	–	–	–	–	2 00	30 00
1 75	–	75	[8]65	[11]1 00	[15]1 50	–	[5]1 00	30	[14]10 00	–	2 00	34 00
1 80	–	80	[11]1 10	–	–	–	–	30	–	1 10	2 00	30 00
[16]97	–	[33]75	1 40	[8]95	–	–	–	30	75	–	[31]1 25	–
–	2 49	–	–	–	–	–	–	–	–	[28]1 00	–	–
–	2 40	–	–	–	1 25	[34]1 25	–	30	–	[6]70	2 00	–
–	2 00	1 00	[8]50	[11]1 00	2 00	[25]2 50	[37]1 00	–	–	–	–	–
–	–	[8]1 50	1 50	–	[40]10 00	[41]20	[42]1 00	[43]2 00	–	[44]1 25	–	[45]50 00
–	–	65	[8]50	[3]40	–	[3]1 00	–	24	50	–	1 00	[46]50 00
1 79	–	80	[8]70	[11]1 15	–	–	–	35	–	–	2 00	33 00
[49]2 00	2 00	[23]2 00	–	[50]1 25	–	–	–	–	–	–	–	–

[25] Sixteen-inch.
[26] Cement rubble masonry.
[27] Broken stone in bins at crusher.
[28] Sand filling.
[29] Gravel for surfacing,
[30] Portland cement concrete masonry, 1, 2, 4.
[31] Bridge excavation.
[32] Scarifying and reshaping.
[33] Six-inch.
[34] Fourteen-inch.
[35] Wood block pavement.
[36] Earth excavation for water supply pipe trenches.
[37] Straight granite edgestone in place.
[38] Ledge excavation for water supply pipe trenches.
[39] Portland cement bowlder concrete masonry.
[40] Granite edgestone inlets in place.
[41] Old granite edgestone removed and replaced.
[42] Curved granite edgestone in place.
[43] Pipe fencing.
[44] Brick pavement between rails of street railway.
[45] Brick catch-basin.
[46] Brick manholes.
[47] Asphalt penetration.
[48] Tar and sand mixed.
[49] Pea stone.
[50] Sand for binding.
[51] Granolithic sidewalk.

Showing Contract Prices on

TOWN OR CITY.	Contractor.	Bituminous Surfacing.		Excavation.			Concrete (Cubic Yard).
		Oil (Square Yard).	Tar (Square Yard).	All Kinds (Cubic Yard).	Borrow (Cubic Yard).	Ledge (Cubic Yard).	Portland Cement Masonry
West Bridgewater (Brockton).	Edward J. Rourke,	–	$0 02½	$0 90	$0 65	–	–
Westfield,	Lane Construction Corporation.	[2]$0 03	13	60	90	[3]$1 00	–
Westport,	Thomas Whelan & Co.,	–	02½	85	–	–	–
Whitman,	Town of Whitman,	–	15	50	60	2 00	$13 50
Whitman,	E. J. Rourke,	02½	–	–	[5]1 25	–	–
Williamsburg,	Luigi Carchia,	04	–	50	–	–	–
Williamstown,	Luigi Carchia,	–	–	70	80	3 00	16 00
Windsor,	Horne-Lowe Contracting Company.	–	–	75	80	2 00	15 00
Windsor,	Horne-Lowe Contracting Company.	–	–	–	–	–	[12]4 00
Wrentham,	Framingham Contracting Company	–	[13]25	55	45	1 50	–

[1] Broken stone in bins at crusher.
[2] Scarifying and reshaping.
[3] Sand for covering.
[4] Excavating, screening and replacing old broken stone.
[5] Sand filling.
[6] Eight-inch.
[7] Ten-inch.
[8] Concrete surfacing.

State Highways during 1914 — *Concluded.*

Broken Stone.		Pipe Culverts (per Lineal Foot).						Fencing (Lineal Foot).	Side Drains (Lineal Foot).	Stone Filling for Underdrains (per Cubic Yard).	Bounds (Each).	Catch-basins (Each).
		Clay.			Iron.							
Local (Ton).	Trap (Ton).	Twelve-inch.	Eighteen-inch.	Twenty-four-inch.	Twelve-inch.	Eighteen-inch.	Twenty-four-inch.					
$1 97	[1]$1 10	–	–	–	–	–	–	–	$0 75	$1 10	–	–
[4]1 80	1 80	–	–	–	–	–	[4]$1 50	–	–	1 25	–	–
–	2 65	–	–	–	–	–	–	–	–	1 20	[5]$1 55	–
1 75	–	[6]$0 50	–	[7]$0 85	$1 20	[6]$2 00	–	$0 30	–	1 15	2 00	$30 00
[8]1 95	–	–	–	–	–	–	–	–	–	–	–	–
1 45	–	–	–	–	–	–	–	–	–	75	–	–
1 40	–	–	–	–	1 25	1 75	3 00	24	[9]2 50	90	[10]17 00	[11]90
–	–	–	–	–	–	–	–	–	–	–	–	–
1 85	–	–	–	–	1 25	1 75	–	30	–	1 10	–	–
2 20	2 25	55	[6]$0 35	[7]45	[6]1 40	–	–	35	–	1 00	2 00	25 00

[9] Bridge excavation.
[10] Portland cement concrete masonry, 1, 2, 4.
[11] Gravel borrow.
[12] Cement rubble masonry.
[13] Bermudez penetration.

Appendix H.

Statement of Claims against the Commission.

[As required by section 5, chapter 18 of the Revised Laws.]

Name.	Residence.	Nature of Claim.
Connelly, William H.,	Lanesborough,	Damages due to construction of State highway in Lanesborough.
Flagg, Lucretia T.,	Northampton,	Damages due to construction of State highway in Northampton.
Gibbs, E. Porter,	Bourne,	Damages due to construction of State highway in Bourne.
Hogan, James J.,	Marlborough,	Damages due to construction of State highway in Marlborough.
Huntington, Herbert R.,	Marlborough,	Damages due to construction of State highway in Marlborough.
Ireson, Jennie E.,	Wrentham,	Damages due to construction of State highway in Wrentham.
Jordan, S. Annie,	Wrentham,	Damages due to construction of State highway in Wrentham.
McGee, John P.,	Marlborough,	Damages due to construction of State highway in Marlborough.
Nourse, Joseph P.,	Marlborough,	Damages due to construction of State highway in Marlborough.
Ray, Foster S.,	Charlton,	Damages due to construction of State highway in Charlton.
Reed, William H.,	Gloucester,	Damages due to accident alleged to have occurred on State highway in Gloucester.
Rogerson, Sophia,	Lanesborough,	Damages due to construction of State highway in Lanesborough.
Stevens, John A., and Priscilla.	Lanesborough,	Damages due to construction of State highway in Lanesborough.
Taft, Kate P.,	Northampton,	Damages due to construction of State highway in Northampton.
Wagner, Jeanette,	Bourne,	Damages due to construction of State highway in Bourne.
York, Addie A.,	Wrentham,	Damages due to construction of State highway in Wrentham.

Appendix I.

Maintenance.

Table showing the Amounts expended for Repair and Maintenance, the Cost per Mile for Maintenance during 1914, the Cost per Mile per Year on Each Road, the Number of Miles under Maintenance and the Amounts to be assessed upon Municipalities for Maintenance under Chapter 47 of the Revised Laws.

TOWN OR CITY.	Amounts expended.						Total expended.	Expended per Mile in 1914.			Cost per Mile per Year.	Length under Maintenance (Miles).	Amount to be assessed on Cities and Towns.
	Revenue Appropriation.			Motor Vehicle Fees Fund.				From Revenue Appropriation.	From Motor Vehicle Fees Fund.	Total.			
	To 1914.	During 1914.	Total.	To 1914.	During 1914.	Total.							
Abington,	$2,431 24	$1,933 44	$3,464 68	$5,469 89	$792 55	$6,262 44	$10,627 12	$358 04	$146 76	$504 80	$275 81	5.40	$700 42
Acton,	5,865 69	1,640 99	7,506 68	3,604 16	213 92	3,818 08	11,324 76	213 67	27 85	241 52	159 16	7.68	899 55
Acushnet,	5,731 15	1,082 74	6,813 89	4,245 58	266 45	4,512 03	11,325 92	317 51	78 13	395 64	254 00	3.41	209 56
Adams,	5,124 03	581 76	5,705 79	1,649 78	40 50	1,690 28	7,396 07	286 58	19 95	306 53	396 99	2.03	453 89
Agawam,	4,420 17	1,310 60	5,730 77	9,465 84	50 36	9,516 20	15,246 97	328 47	12 62	341 09	542 60	3.99	436 66
Amesbury,	4,908 32	898 09	5,806 41	229 33	43 17	272 50	6,078 91	272 14	13 08	285 22	185 70	3.30	573 14
Amherst,	1,532 55	759 99	2,292 54	1,963 39	25 93	1,989 32	4,281 86	429 37	14 65	444 02	330 64	1.77	476 53
Andover,	14,349 09	3,443 20	17,792 29	21,264 35	459 76	21,724 11	39,516 40	821 76	109 72	931 48	634 29	4.19	1,874 97
Ashburnham,	169 33	225 73	395 06	–	49 78	49 78	444 84	336 91	74 29	411 20	311 08	.67	64 00
Ashby,	10,955 26	1,842 21	12,797 47	2,346 35	54 12	2,400 47	15,197 94	361 92	10 63	372 55	231 37	5.09	254 50
Ashfield,	3,779 70	136 61	3,916 31	259 11	8 99	268 10	4,184 41	84 85	5 58	90 43	161 69	1.61	40 25
Ashland,	1,956 04	337 08	2,293 12	531 72	830 72	1,362 44	3,655 56	105 33	259 60	364 93	162 82	3.20	192 17
Athol,	11,154 64	633 00	11,787 64	10,053 24	21 81	10,075 05	21,862 69	204 19	7 03	211 22	511 41	3.10	486 43
Attleborough,	6,000 92	756 61	6,757 53	15,959 20	3,447 17	19,406 37	26,163 90	223 18	1,016 86	1,240 04	687 79	3.39	1,037 51
Auburn,	27,399 60	1,360 94	28,760 54	14,991 38	570 73	15,562 11	44,322 65	257 75	108 09	365 84	589 32	5.28	372 10
Ayer,	2 23	79 76	81 99	–	6 13	6 13	88 12	49 23	3 78	53 01	111 53	1.62	℔ 41 70
Barnstable,	8,474 41	1,686 46	10,160 87	12,647 46	8,787 74	21,435 20	31,596 07	150 98	786 72	937 70	331 72	11.17	3,140 48
Barre,	11,248 59	808 01	12,056 60	320 02	212 07	532 09	12,588 69	279 58	73 38	352 96	314 72	2.89	298 03

Table showing the Amounts expended for Repair, Maintenance, etc. — Continued.

TOWN OR CITY.	Amounts expended.						Total expended.	Expended per Mile in 1914.			Cost per Mile per Year.	Length under Maintenance (Miles).	Amount to be assessed on Cities and Towns.
	Revenue Appropriation.			Motor Vehicle Fees Fund.				From Revenue Appropriation.	From Motor Vehicle Fees Fund.	Total.			
	To 1914.	During 1914.	Total.	To 1914.	During 1914.	Total.							
Becket,	$10,130 11	$2,532 75	$12,662 86	$10,539 72	$1,470 52	$12,010 24	$24,673 10	$285 22	$165 59	$450 81	$571 53	8.88	–
Bedford,	1,772 17	385 84	2,158 01	3,963 24	29 50	3,992 74	6,150 75	233 84	17 88	251 72	309 86	1.65	$119 69
Belchertown,	1,762 25	311 65	2,073 90	212 44	72 53	284 97	2,358 87	96 48	22 45	118 93	96 36	3.23	131 99
Bellingham,	1,449 70	488 95	1,938 65	3,578 26	21 43	3,599 69	5,538 34	153 75	6 74	160 49	194 07	3.18	159 00
Berkley,	483 85	366 67	850 52	33 00	162 86	195 86	1,046 38	291 01	129 25	420 26	158 30	1.26	37 30
Bernardston,	1,312 49	627 85	1,940 34	1,172 80	210 69	1,383 49	3,323 83	232 54	78 03	310 57	369 31	2.70	112 10
Beverly,	22,795 30	19,657 46	42,452 76	59,606 42	1,398 55	61,004 97	103,457 73	3,460 82	246 22	3,707 04	150 53	5.68	2,546 20
Billerica,	826 55	165 19	991 74	474 14	13 67	487 81	1,479 55	284 81	23 57	308 38	471 19	.58	87 64
Blackstone,	3,286 73	981 90	4,268 63	2,155 31	227 74	2,383 05	6,651 68	263 24	61 05	324 29	240 22	3.73	537 05
Bourne,	5,917 49	581 53	6,499 02	7,897 78	1,251 63	9,149 41	15,648 43	61 79	133 01	194 80	255 65	9.41	826 32
Boston,	3,557 54	1,606 07	5,163 61	1,010 35	354 53	1,364 88	6,528 49	1,147 19	253 24	1,400 43	861 28	1.40	700 00
Boxborough,	3,430 84	636 90	4,067 74	4,457 79	265 30	4,723 09	8,790 83	192 42	80 15	272 57	237 98	3.31	151 17
Braintree,	2,298 03	180 72	2,478 75	3,039 45	124 79	3,164 24	5,642 99	170 49	117 72	288 21	420 80	1.06	177 76
Brewster,	10,050 22	1,923 44	11,973 66	3,529 50	431 45	3,960 95	15,934 61	245 96	55 17	301 13	138 74	7.82	296 20
Bridgewater,	4,304 88	385 60	4,690 48	1,667 36	221 30	1,888 66	6,579 14	111 12	63 77	174 89	210 87	3.47	253 10
Brimfield,	3,730 41	297 62	4,028 03	6,831 90	–	6,831 90	10,859 93	74 97	–	74 97	192 11	3.97	148 81
Broekton,	4,308 96	872 94	5,181 90	7,758 01	3,092 54	10,850 55	16,032 45	230 33	815 97	1,046 30	354 39	3.79	1,115 42
Brookfield,	10,303 72	1,193 03	11,496 75	2,332 68	709 38	3,042 06	14,538 81	257 67	153 21	410 88	301 69	4.63	379 89
Buckland,	8,684 22	1,490 02	10,174 24	4,786 39	5,871 35	10,657 74	20,831 98	347 32	368 61	1,715 93	328 58	4.29	308 19
Burlington,	5,019 95	1,331 90	6,351 85	2,354 54	23 23	2,377 77	8,729 62	350 50	6 11	356 61	239 24	3.80	190 00
Canton,	4,215 03	438 92	4,653 95	6,367 83	1,079 28	7,447 11	12,101 06	135 88	334 14	470 02	500 25	3.23	587 27
Charlemont,	5,336 08	453 00	5,789 08	278 12	289 93	568 05	6,357 13	172 90	110 66	283 56	499 38	2.62	85 25
Charlton,	5,602 96	1,847 63	7,450 59	210 53	1,753 52	1,964 05	9,414 64	186 44	176 94	363 38	198 12	9.91	675 54
Chatham,	4,961 98	1,467 85	6,429 83	5,986 06	1,371 88	7,357 94	13,787 77	204 72	191 33	396 05	212 12	7.17	450 74
Chelmsford,	5,464 20	1,439 39	6,903 59	5,664 92	2,446 42	8,111 34	15,014 93	231 78	393 95	625 73	301 51	6.21	830 59
Chelsea,	2,889 74	1,133 16	4,022 90	10,437 66	25 90	10,463 56	14,486 46	1,180 37	26 98	1,207 35	1,357 68	.96	458 40
Cheshire,	8,998 49	1,264 67	10,263 16	493 69	339 70	833 39	11,096 55	234 19	62 91	297 10	267 71	5.40	199 55
Chester,	8,845 76	1,811 14	10,656 90	1,614 73	1,251 56	2,866 29	13,523 19	273 58	189 05	462 63	268 10	6.62	270 74
Chicopee,	20,546 13	829 03	21,375 16	37,847 32	51 17	37,898 49	59,273 65	213 12	13 15	226 27	1,502 50	3.89	1,209 39
Chilmark,	1,506 80	991 51	2,498 31	3,123 34	1,548 37	4,671 71	7,170 02	162 01	253 00	415 01	188 34	6.12	173 28
Clarksburg,	3,004 21	352 83	3,357 04	196 08	69 81	265 89	3,622 93	291 59	57 69	349 28	457 44	1.21	57 50
Cohasset,	4,263 08	943 82	5,206 90	4,071 49	231 76	4,303 25	9,510 15	413 95	101 65	515 60	295 43	2.28	547 97
Colrain,	2,924 31	192 42	3,116 73	150 18	47 54	197 72	3,314 45	90 34	22 32	112 66	116 01	2.13	61 85
Concord,	11,903 96	1,174 86	13,078 82	3,045 00	261 99	3,306 99	16,385 81	280 39	62 53	342 92	365 18	4.19	1,040 94

Dalton,	8,684 16	630 03	9,314 19	3,006 34	311 99	3,318 33	12,632 52	246 10	121 87	367 97	326 49	2.56	304 81
Dartmouth,	6,440 66	1,610 01	8,050 67	27,952 42	1,047 13	28,999 55	37,050 22	354 62	230 64	585 26	665 77	4.54	999 54
Dedham,	30 13	285 72	315 85	14 68	22 33	37 01	352 86	348 44	27 23	375 67	250 78	.82	148 47
Deerfield,	13,072 81	11,769 71	24,842 52	23,363 93	7,882 85	31,246 78	56,089 30	1,501 24	1,005 46	2,506 70	769 17	7.84	1,568 00
Dennis,	8,977 36	2,166 94	11,144 30	5,746 51	769 28	6,515 79	17,660 09	288 92	102 57	391 49	159 83	7.50	473 77
Dighton,	2,921 76	568 69	3,490 45	5,084 72	3,505 10	8,589 82	12,080 27	109 36	674 06	783 42	364 59	5.20	306 27
Douglas,	2,099 73	368 97	2,468 70	6,363 51	317 29	6,680 80	9,149 50	173 22	148 96	322 18	421 25	2.13	203 24
Dover,	1,889 43	755 77	2,645 20	488 04	254 02	742 06	3,387 26	346 68	116 52	463 20	212 50	2.18	454 22
Dracut,	975 18	846 61	1,821 79	55	18 75	19 30	1,841 09	166 32	3 68	170 00	107 98	5.09	423 31
Dudley,	4,475 73	703 22	5,178 95	6,605 60	234 83	6,840 43	12,019 38	307 08	102 54	409 62	585 45	2.29	300 98
Duxbury,	8,408 56	554 39	8,962 95	1,896 54	246 89	2,143 43	11,106 38	107 44	47 84	155 28	183 36	5.16	314 10
East Longmeadow,	1,430 99	373 14	1,804 13	4 61	16 17	20 78	1,824 91	207 30	8 98	216 28	138 36	1.80	89 72
Eastham,	4,125 90	840 84	4,966 74	4,261 17	703 84	4,965 01	9,931 75	130 16	108 95	239 11	253 29	6.46	218 09
Easthampton,	4,503 78	1,053 65	5,557 43	630 97	42 63	673 60	6,231 03	380 37	15 38	395 75	157 51	2.77	782 84
Easton,	856 32	166 08	1,022 40	6,666 72	72 39	6,739 11	7,761 51	207 60	90 48	298 08	694 85	.80	128 26
Edgartown,	3,878 98	954 91	4,833 89	810 71	298 81	1,109 52	5,943 41	394 59	123 47	518 06	183 16	2.42	139 56
Erving,	5,647 93	1,543 60	7,191 53	2,401 31	317 06	2,718 37	9,909 90	190 09	39 04	229 13	213 89	8.12	532 50
Essex,	3,478 45	273 84	3,752 29	758 44	69 85	828 29	4,580 58	187 56	47 84	235 40	869 17	1.46	87 63
Fairhaven,	1,701 55	227 00	1,928 55	3,536 24	9,460 66	12,996 90	14,925 45	156 55	6,524 59	6,681 14	536 89	1.45	198 41
Falmouth,	14,572 38	2,689 91	17,262 29	19,651 63	1,753 39	21,404 92	38,667 21	172 87	112 68	285 55	281 32	15.56	1,971 48
Fitchburg,	8,753 38	4,294 60	13,047 98	17,721 99	277 65	17,999 64	31,047 62	1,042 38	67 39	1,109 77	534 94	4.12	1,334 40
Florida,	–	–	–	–	–	–	–	–	–	–	–	7.20	–
Foxborough,	2,429 99	863 72	3,293 71	1,714 26	322 95	2,037 21	5,330 92	246 07	92 01	338 08	152 97	3.51	355 13
Framingham,	3,376 30	1,106 29	4,482 59	4,144 31	82 44	4,226 75	8,709 34	344 64	25 68	370 32	313 13	3.21	890 67
Franklin,	1,876 39	934 54	2,810 93	1,536 18	387 35	1,923 53	4,734 46	248 55	103 02	351 57	271 48	3.76	458 08
Freetown,	2,839 50	431 95	3,271 45	3,980 99	465 63	4,446 62	7,718 07	111 61	120 31	231 92	192 61	3.87	224 04
Gardner,	7,030 34	706 91	7,737 25	18,412 86	2,087 03	20,499 89	28,237 14	210 39	621 14	831 53	545 01	3.36	482 70
Gill,	–	–	–	–	–	–	–	–	–	–	–	.28	–
Gloucester,	23,536 19	2,772 78	25,308 97	9,841 58	275 49	10,117 07	35,426 04	696 67	69 22	765 89	653 38	3.98	1,856 37
Goshen,	7,381 38	375 00	7,756 38	11,929 20	626 34	12,555 54	20,311 92	152 44	254 61	407 05	516 98	2.46	87 25
Grafton,	5,952 89	1,723 86	7,676 75	5,915 30	134 55	6,049 85	13,726 60	297 73	23 24	320 97	423 78	5.79	701 19
Granby,	7,209 63	633 38	7,843 01	173 15	130 64	303 79	8,146 80	96 55	19 91	116 46	233 70	6.56	206 12
Great Barrington,	13,903 17	588 48	14,491 65	12,361 93	10,874 88	23,236 81	37,728 46	172 57	3,189 11	3,361 68	664 47	3.41	1,054 27
Greenfield,	3,300 84	1,071 73	4,372 57	5,047 40	866 18	5,913 58	10,286 15	199 95	161 60	361 55	238 60	5.36	1,048 94
Groton,	1,302 20	706 41	2,008 61	684 92	75 45	760 37	2,768 98	501 00	53 51	554 51	165 61	1.41	200 36
Groveland,	2,635 66	428 89	3,064 55	2,903 08	18 42	2,921 50	5,986 05	249 35	10 70	260 05	300 35	1.72	135 45
Hadley,	13,822 61	1,337 98	15,160 59	11,835 97	8,803 28	20,639 25	35,799 84	285 28	1,877 03	2,162 31	527 79	4.69	387 51
Hamilton,	5,553 54	934 01	6,487 55	2,560 37	47 39	2,607 76	9,095 31	351 13	17 81	368 94	343 22	2.66	736 29
Hancock,	25,627 04	1,062 40	26,689 44	7,960 31	759 27	8,719 58	35,409 02	328 91	235 06	563 97	666 71	3.23	–
Hanover,	1,338 16	548 27	1,886 43	668 69	50 50	719 19	2,605 62	296 36	27 29	323 65	204 04	1.85	120 94
Hardwick,	1,809 64	169 36	1,979 00	–	9 50	9 50	1,988 50	206 53	11 58	218 11	163 80	.82	84 68
Harvard,	1,580 76	628 11	2,208 87	464 53	165 21	629 74	2,838 61	271 90	71 51	343 41	141 57	2.31	146 08
Harwich,	7,062 14	1,547 92	8,610 06	5,487 98	738 58	6,226 56	14,836 72	238 87	113 99	352 86	202 32	6.48	340 46
Hatfield,	4,009 80	555 98	4,565 78	1,454 15	33 60	1,487 75	6,053 53	157 05	9 49	166 54	331 52	3.54	294 79

Table showing the Amounts expended for Repair, Maintenance, etc. — Continued.

TOWN OR CITY.	Amounts expended.						Total expended.	Expended per Mile in 1914.			Cost per Mile per Year.	Length under Maintenance (Miles).	Amount to be assessed on Cities and Towns.
	Revenue Appropriation.			Motor Vehicle Fees Fund.				From Revenue Appropriation.	From Motor Vehicle Fees Fund.	Total.			
	To 1914.	During 1914.	Total.	To 1914.	During 1914.	Total.							
Haverhill,	$13,054 36	$2,708 14	$15,762 50	$2,773 41	$204 12	$2,977 53	$18,740 03	$173 45	$35 68	$509 13	$342 58	5.72	$1,927 38
Hingham,	6,580 51	595 88	7,176 39	10,400 98	164 24	10,565 22	17,741 61	224 01	61 74	285 75	366 41	2.66	399 84
Hinsdale,	1,285 17	235 46	1,520 63	102 69	17 02	119 71	1,640 34	230 84	16 68	247 52	137 49	1.02	51 00
Holbrook,	1,475 72	689 45	2,165 17	3,431 99	400 58	3,832 57	5,997 74	393 97	228 90	622 87	215 05	1.75	163 08
Holden,	13,549 20	965 59	14,514 79	7,827 87	2,126 98	9,954 85	24,469 64	203 71	448 73	652 44	336 77	4.74	391 96
Holliston,	2,159 91	1,107 70	3,267 61	1,602 64	351 32	1,953 96	5,221 57	224 68	71 26	295 94	255 70	4.93	602 19
Holyoke,	4,037 14	1,060 17	5,097 31	24,635 90	6,913 24	31,549 14	36,646 45	254 85	1,661 83	1,916 68	2,004 73	4.16	1,108 04
Hudson,	1,036 82	399 27	1,436 09	434 37	68 11	502 48	1,938 57	350 23	59 74	409 97	220 04	1.14	142 99
Huntington,	9,658 72	644 76	10,303 48	3,680 28	204 15	3,884 43	14,187 91	285 29	90 33	375 62	497 82	2.26	84 47
Ipswich,	2,407 01	1,043 31	3,450 32	3,323 60	36 09	3,359 69	6,810 01	236 04	8 16	244 20	300 39	4.42	584 05
Kingston,	1,286 72	365 75	1,652 47	1,033 07	73 33	1,106 40	2,758 87	358 57	71 89	430 46	173 84	1.02	81 76
Lakeville,	2,954 48	1,620 61	4,575 09	3,035 49	671 22	3,706 71	8,281 80	193 85	80 28	274 13	146 63	8.36	534 11
Lancaster,	1,708 01	543 92	2,251 93	997 81	75 95	1,073 76	3,325 69	435 13	60 76	495 89	218 65	1.25	510 75
Lanesborough,	1,390 71	1,108 03	2,498 74	422 08	58 86	480 94	2,979 68	483 85	25 70	509 55	480 59	2.29	62 68
Lawrence,	3,897 42	177 90	4,075 32	169 81	15,027 00	15,196 81	19,272 13	658 88	55,655 55	56,314 43	4,117 97	.27	135 00
Lee,	23,194 72	2,659 77	25,854 49	6,055 46	663 62	6,719 08	32,573 57	332 88	83 05	415 93	458 78	7.99	1,053 25
Leicester,	31,468 93	2,110 07	33,579 00	27,130 30	785 06	27,915 36	61,494 36	433 28	161 20	594 48	753 61	4.87	800 27
Lenox,	41,477 77	2,144 70	43,622 47	32,965 09	759 40	33,724 49	77,346 96	279 98	99 13	379 11	1,043 82	7.66	3,113 86
Leominster,	3,005 23	746 29	3,751 52	970 23	83 59	1,053 82	4,805 34	342 33	38 34	380 67	180 00	2.18	612 37
Lexington,	14,384 42	1,930 35	16,314 77	11,912 77	776 78	12,689 55	29,004 32	449 96	181 06	631 02	408 22	4.29	1,439 70
Lincoln,	8,393 52	747 19	9,140 71	4,299 90	362 46	4,662 36	13,803 07	362 71	175 95	538 66	374 66	2.06	358 04
Littleton,	3,202 81	917 25	4,120 06	12,663 38	897 51	13,560 89	17,680 95	199 40	195 11	394 51	557 93	4.60	277 83
Lowell (east),	–	129 50			60 07								
Lowell (north),	18,105 98	361 28	19,435 02	2,152 23	17 75	2,496 75	21,931 77	501 52	129 99	631 51	553 14	2.65	1,194 18
Lowell (south),	–	838 26			266 67								
Lunenburg,	7,185 00	1,880 00	9,065 00	15,127 31	225 23	15,352 54	24,417 54	379 79	45 50	425 29	553 81	4.95	408 72
Lynn,	8,536 49	742 31	9,278 80	6,316 36	50 94	6,367 30	15,646 10	824 78	56 60	881 38	1,891 91	.90	345 38
Mansfield,	974 07	236 58	1,210 65	539 54	104 24	643 78	1,854 43	195 52	86 14	281 66	146 59	1.21	121 00
Marion,	11,636 06	1,058 40	12,694 46	6,226 90	7,901 23	14,128 13	26,822 59	160 12	1,195 34	1,355 46	332 33	6.61	1,820 47
Marlborough,	17,086 58	4,029 45	21,116 03	6,987 68	304 46	7,192 14	28,308 17	593 43	30 11	623 54	382 33	6.79	3,157 12
Marshfield,	8,455 27	972 27	9,427 54	4,719 71	4,110 08	8,829 79	18,257 33	117 42	496 38	613 80	240 34	8.28	946 70
Mashpee,	30 36	195 54	225 90	66 48	12 59	79 07	304 97	34 24	2 20	36 44	34 93	5.71	97 77
Mattapoisett,	5,064 76	740 87	5,805 63	8,798 46	1,540 66	10,339 12	16,144 75	230 80	479 95	710 75	333 64	3.21	270 48

Medford,	1,396 13	215 51	1,611 64	3,927 51	11,232 08	15,159 59	16,771 23	250 59	13,060 55	13,311 14	3,038 27	.86	243 49
Melrose,	565 35	104 78	670 13	14 44	–	14 44	684 57	261 95	–	261 95	211 94	.40	86 43
Merrimac,	3,236 97	730 45	3,967 42	961 98	16 58	978 56	4,945 98	327 55	7 43	334 98	161 47	2.23	180 27
Methuen,	8,369 44	2,784 51	11,153 95	3,557 96	68 69	3,626 65	14,780 60	570 59	14 07	584 66	317 18	4.88	2,025 45
Middleborough,	7,731 18	9,121 94	16,853 12	13,604 48	4,845 23	18,449 71	35,302 83	732 68	389 17	1,121 85	247 34	12.45	1,902 81
Middleton,	41 88	118 05	159 93	–	–	–	159 93	82 55	–	82 55	128 97	1.43	47 98
Milford,	2,079 77	728 09	2,807 86	4,939 67	81 68	5,021 35	7,829 21	205 09	23 01	228 10	338 78	3.55	546 79
Millbury,	3,582 28	1,817 14	5,399 42	4,779 48	257 27	5,036 75	10,436 17	609 77	86 33	696 10	324 91	2.98	538 04
Milton,	5,929 89	126 13	6,056 02	1,432 10	1,548 31	2,980 41	9,036 43	144 97	1,779 66	1,924 63	748 05	.87	236 23
Monson,	3,360 05	123 55	3,483 60	35 88	7 62	43 50	3,527 10	76 74	4 73	81 47	151 09	1.61	61 78
Montague,	5,827 19	952 79	6,779 98	6,277 54	268 66	6,546 20	13,326 18	166 28	46 88	213 16	255 58	5.73	581 05
Nantucket,	15,964 69	487 88	16,452 57	5,488 53	363 85	5,852 38	22,304 95	75 29	56 15	131 44	211 28	6.48	310 94
Natick,	5,685 89	1,726 08	7,411 97	7,839 54	13,963 95	21,803 49	29,215 46	539 40	4,363 73	4,903 13	812 67	3.20	1,600 00
Needham,	1,403 90	654 86	2,058 76	1,307 86	184 18	1,492 04	3,550 80	322 59	90 72	413 31	171 43	2.03	374 58
New Braintree,	400 23	34 86	435 09	–	1 01	1 01	436 10	87 15	2 52	89 67	84 19	.40	17 13
Newbury,	9,365 84	1,806 21	11,172 05	7,986 27	85 65	8,071 92	19,243 97	427 00	20 24	447 24	389 00	4.23	317 43
Newburyport,	8,500 78	619 39	9,120 17	2,885 74	103 61	2,989 35	12,109 52	353 93	59 20	413 13	426 09	1.75	538 88
Newton,	814 79	368 08	1,182 87	1,818 91	4,080 79	5,899 70	7,082 57	357 36	3,961 93	4,319 29	525 41	1.03	316 22
Norfolk,	3,018 61	182 90	3,201 51	3,876 09	264 19	4,140 28	7,341 79	126 14	182 20	308 34	213 24	1.45	94 65
North Adams,	26,740 28	1,544 84	28,285 12	8,712 66	852 46	9,565 12	37,850 24	190 01	104 85	294 86	622 03	8.13	2,090 07
Northampton,	7,128 55	859 31	7,987 86	1,814 79	9,889 22	11,704 01	19,691 87	200 30	2,305 18	2,505 48	621 58	4.29	1,584 50
North Andover,	5,754 75	2,551 60	8,306 35	1,246 29	51 21	1,297 50	9,603 85	335 73	6 73	342 46	248 48	7.60	1,781 03
North Attleborough,	5,940 96	1,108 81	7,049 77	25,473 44	9,458 28	34,931 72	41,981 49	308 00	2,627 30	2,935 30	655 45	3.60	1,056 54
Northborough,	7,995 75	2,142 00	10,137 75	3,340 22	150 75	3,490 97	13,628 72	481 34	33 87	515 21	248 97	4.45	445 00
Northbridge,	–	43 18	43 18	–	–	–	43 18	35 10	–	35 10	98 14	1.23	21 04
North Brookfield,	1,194 48	403 14	1,597 62	63 07	18	63 25	1,660 87	179 17	08	179 25	107 22	2.25	201 67
Northfield,	1,835 83	1,192 37	3,028 20	211 77	358 27	570 04	3,598 24	496 82	149 28	646 10	233 49	2.40	167 52
North Reading,	3,811 34	2,401 54	6,212 88	5,850 18	53 92	5,904 10	12,116 98	945 48	21 23	966 71	371 11	2.54	127 00
Norton,	2,791 74	1,674 95	4,466 69	2,183 67	185 84	2,369 51	6,836 20	356 37	39 54	395 91	356 61	4.70	468 92
Norwood,	9,441 11	356 06	9,797 17	5,546 20	6,168 80	11,715 00	21,512 17	172 01	2,980 09	3,152 10	613 74	2.07	635 33
Oak Bluffs,	7,964 66	1,206 50	9,171 16	862 57	57 11	919 68	10,090 84	509 07	24 09	533 16	228 76	2.37	140 06
Orange,	14,849 73	1,054 08	15,903 81	21,964 67	220 96	22,185 63	38,089 44	220 06	46 13	266 19	554 51	4.79	537 53
Orleans,	3,545 05	1,101 60	4,646 65	2,478 28	1,828 04	4,306 32	8,952 97	234 38	388 94	623 32	182 79	4.70	507 17
Oxford,	2,751 37	834 74	3,586 11	110 57	663 03	773 60	4,359 71	228 69	181 65	410 34	298 61	3.65	409 97
Palmer,	19,267 52	2,015 44	21,282 96	17,232 45	5,743 78	22,976 23	44,259 19	203 17	579 01	782 18	533 95	9.92	4,054 04
Paxton,	19,131 37	1,298 00	20,429 37	10,113 66	1,064 74	11,178 40	31,607 77	360 55	295 76	656 31	498 07	3.60	180 00
Pembroke,	628 11	178 40	806 51	719 44	68 07	787 51	1,594 02	509 71	194 48	704 19	520 92	.35	29 56
Pepperell,	634 79	661 25	1,296 04	635 87	149 35	785 22	2,081 26	332 29	75 04	407 34	289 46	1.99	260 54
Phillipston,	6,964 73	10,652 91	17,617 64	2,610 70	297 97	2,908 67	20,526 31	3,831 98	107 18	3,939 16	713 46	2.78	139 25
Pittsfield,	41,001 22	2,510 19	43,511 41	6,610 40	22,686 11	29,296 51	72,807 92	358 59	3,240 87	3,599 46	911 12	7.00	3,500 00
Plainville,	2,327 03	463 85	2,790 88	12,699 95	4,372 39	17,072 34	19,863 22	201 67	1,901 04	2,102 71	1,012 91	2.30	211 08
Plymouth,	9,647 72	931 63	10,579 35	6,124 40	1,682 00	7,806 40	18,385 75	58 66	105 91	164 57	178 12	15.88	1,346 80

Table showing the Amounts expended for Repair, Maintenance, etc. — Continued.

TOWN OR CITY.	Amount expended.						Total expended.	Expended per Mile in 1914.			Cost per Mile per Year.	Length under Maintenance (Miles).	Amount to be assessed on Cities and Towns.
	Revenue appropriation.			Motor vehicle fees fund.				From Revenue Appropriation.	From Motor Vehicle Fees Fund.	Total.			
	To 1914.	During 1914.	Total.	To 1914.	During 1914.	Total.							
Princeton,	$2,314 00	$381 61	$2,695 61	$2,100 02	$731 94	$2,831 96	$5,527 57	$171 12	$328 22	$499 34	$194 36	2.23	$127 75
Provincetown,	1,995 36	474 98	2,470 34	5,569 47	3,231 01	8,800 48	11,270 82	431 80	2,937 28	3,369 08	883 98	1.10	116 19
Quincy,	5,971 69	546 37	6,518 06	12,531 93	205 19	12,737 12	19,255 18	204 63	76 85	281 48	710 52	2.67	363 03
Randolph,	1,419 59	343 69	1,763 28	6,978 00	249 61	7,227 61	8,990 89	180 89	131 37	312 26	494 54	1.90	238 37
Raynham,	907 85	645 43	1,553 28	999 12	337 88	1,337 00	2,890 28	189 83	99 37	289 20	145 24	3.40	124 92
Reading,	9,811 10	1,337 16	11,148 26	5,391 31	12,775 45	18,166 76	29,315 02	357 52	3,413 22	3,770 74	667 92	3.74	1,870 00
Rehoboth,	4,468 43	6,907 41	11,375 84	7,064 17	553 21	7,617 38	18,993 22	1,056 17	84 58	1,140 75	286 30	6.54	654 50
Revere (east),	7,683 12	586 31	8,269 43	10,412 80	72 86	10,485 66	18,755 09	1,010 87	125 62	1,136 49	1,995 22	.58	845 00
Revere (west),	–	1,203 54	1,203 54	–	25 87	25 87	1,229 41	1,084 27	23 30	1,107 57	121 12	1.11	–
Richmond,	4,524 23	540 77	5,065 00	5,414 46	566 89	5,981 35	11,046 35	134 52	141 01	275 53	233 68	4.02	148 00
Rochester,	3,350 10	1,682 25	5,032 35	4,465 26	336 45	4,801 71	9,834 06	272 65	54 53	327 18	160 08	6.17	213 34
Rockland,	1,774 68	1,324 79	3,099 47	4,072 08	90 67	4,162 75	7,262 22	563 74	38 58	602 32	316 85	2.35	710 33
Rockport,	1,377 93	1,349 22	2,727 15	2,321 75	159 40	2,481 15	5,208 30	843 26	99 62	942 88	473 48	1.60	261 14
Rowley,	3,974 62	1,567 45	5,542 07	3,229 44	93 48	3,322 92	8,864 99	430 61	25 68	456 29	445 03	3.64	452 92
Russell,	27,213 65	1,049 51	28,263 16	14,489 49	7,834 72	22,324 21	50,587 37	157 58	1,176 38	1,333 96	447 04	6.66	512 49
Rutland,	1,378 07	127 25	1,505 32	–	3,562 37	3,562 37	5,067 69	109 69	3,071 00	3,180 69	485 41	1.16	58 00
Salem,	2,269 67	1,466 30	3,735 97	4,347 99	341 05	4,689 04	8,425 01	1,047 35	243 60	1,290 95	103 75	1.40	700 00
Salisbury,	2,990 88	1,446 94	4,437 82	7,586 16	590 13	8,176 29	12,614 11	228 22	93 08	321 30	453 59	6.35	403 07
Sandwich,	6,579 78	1,480 06	8,059 84	5,456 97	1,726 03	7,183 00	15,242 84	193 72	225 92	419 64	286 38	7.64	496 58
Saugus,	7,649 40	1,299 39	8,948 79	22,899 23	13 99	22,913 22	31,862 01	710 04	7 64	717 68	1,286 82	1.83	894 43
Scituate,	8,947 65	910 16	9,857 81	2,733 79	3,177 08	5,910 87	15,768 68	169 48	591 63	761 11	290 83	5.37	1,542 93
Savoy,	–	–	–	–	–	–	–	–	–	–	–	1.76	–
Seekonk,	4,294 17	2,949 59	7,243 76	13,255 53	12,480 40	25,735 93	32,979 69	489 15	2,069 71	2,558 86	828 22	6.03	490 48
Sharon,	283 95	104 61	388 56	289 45	34 89	324 34	712 90	163 45	54 51	217 96	183 27	.64	63 75
Shelburne,	7,423 56	410 75	7,834 31	692 38	5,460 28	6,152 66	13,986 97	190 16	2,527 90	2,718 06	354 55	2.16	160 67
Sheffield,	–	90	90	–	48 57	48 57	49 47	28	15 41	15 69	17 79	3.15	24 74
Shrewsbury,	20,793 21	3,258 04	24,051 25	23,435 75	15,821 00	39,256 75	63,308 00	670 37	3,255 35	3,925 72	857 25	4.86	887 98
Shirley,	–	46 00	46 00	–	3 62	3 62	49 62	71 87	5 65	77 52	171 10	.64	24 81
Somerset,	9,517 83	2,929 45	12,447 28	27,271 54	3,425 18	30,696 72	43,144 00	366 18	428 14	794 32	435 97	8.00	775 19
Somerville,	3,250 95	1,602 47	4,853 42	3,607 62	1,584 97	5,192 59	10,046 01	1,381 44	1,366 35	2,747 79	1,453 82	1.16	580 00
Southampton,	659 77	85 76	745 53	–	–	–	745 53	120 78	–	120 78	119 86	.71	33 25
Southborough,	3,359 39	690 08	4,049 47	2,415 38	683 97	3,099 35	7,148 82	187 01	185 35	372 36	273 90	3.69	417 52
Southbridge,	2,558 39	75 02	2,633 41	677 71	–	677 71	3,311 12	55 16	–	55 16	228 04	1.36	176 64
South Hadley,	19,906 35	1,987 32	21,893 67	13,873 55	309 84	14,183 39	36,077 06	281 49	43 88	325 37	487 66	7.06	906 64

Spencer,	9,602 41	767 53	10,369 94	4,209 56	263 16	4,472 72	18,842 66	250 82	86 00	336 82	478 94	3.06	386 55
Sterling,	5,319 63	1,228 34	6,547 97	1,877 93	366 91	2,244 84	8,792 81	211 78	63 26	275 04	216 73	5.80	474 16
Stockbridge,	7,497 68	783 77	8,281 45	1,256 72	62 34	1,319 06	9,600 51	237 50	18 89	256 39	439 58	3.30	416 26
Stoneham,	7,852 59	615 18	8,467 77	4,237 71	12,202 86	16,440 57	24,908 34	389 35	7,723 33	8,112 68	1,077 35	1.58	790 00
Stoughton,	4,835 03	459 74	5,294 77	6,610 12	258 07	6,868 19	12,162 96	139 31	78 20	217 51	369 24	3.30	252 57
Sturbridge,	2,819 49	210 28	3,029 77	5,006 80	–	5,006 80	8,036 57	89 10	–	89 10	363 98	2.36	83 32
Sudbury,	21,378 06	3,439 80	24,817 86	8,484 41	187 69	8,672 10	33,489 96	673 15	36 73	709 88	493 28	5.11	511 00
Sunderland,	1,174 85	883 74	2,058 59	1,156 16	5,632 98	6,789 14	8,847 73	222 60	1,418 88	1,641 48	518 32	3.97	105 51
Sutton,	3,336 20	678 31	4,514 51	4,450 38	428 84	4,879 22	9,393 73	297 50	188 08	485 58	326 62	2.28	188 84
Swampscott,	6,856 38	1,814 00	8,670 38	3,868 54	150 06	4,018 60	12,688 98	1,217 44	100 71	1,318 15	557 75	1.49	745 00
Swansea,	2,931 29	2,422 10	5,353 39	5,457 62	844 92	6,302 54	11,655 93	364 22	127 05	491 27	280 73	6.65	513 68
Taunton,	6,073 52	949 31	7,022 83	6,084 11	2,593 14	8,677 25	15,700 08	106 90	292 02	398 92	244 15	8.88	1,775 37
Templeton,	5,041 41	1,690 72	6,732 13	11,522 99	195 26	11,718 25	18,450 38	297 13	34 31	331 44	379 41	5.69	371 35
Tewksbury,	5,053 81	1,723 50	6,777 31	4,206 24	272 26	4,478 50	11,255 81	287 25	45 37	332 62	164 58	6.00	489 06
Tisbury,	2,695 85	563 12	3,258 97	1,356 59	674 45	2,031 04	5,290 01	291 77	349 45	641 22	141 78	1.93	126 38
Townsend,	5,838 87	1,973 79	7,812 66	7,947 99	386 28	8,334 27	16,146 93	327 32	64 05	391 37	223 30	6.03	415 17
Truro,	5,578 81	1,530 34	7,109 15	2,100 84	443 79	2,544 63	9,653 78	484 28	140 44	624 72	222 08	3.16	158 00
Tyngsborough,	9,451 23	1,547 23	10,998 46	1,601 22	395 20	1,996 42	12,994 88	228 54	58 37	286 91	194 07	6.77	338 50
Uxbridge,	3,398 07	854 84	4,252 91	5,274 60	51 44	5,326 04	9,578 95	258 26	15 54	273 80	269 37	3.31	439 39
Wales,	–	131 74	131 74	299 82	–	299 82	431 56	126 67	–	126 67	33 64	1.04	42 29
Walpole,	13,070 51	498 46	13,568 97	11,209 05	9,228 77	20,437 82	34,006 79	90 96	1,684 08	1,775 04	441 13	5.48	1,471 05
Ware,	6,265 61	783 58	7,049 19	1 10	12 14	13 24	7,062 43	187 45	2 90	190 35	169 93	4.18	1,264 88
Wareham,	11,848 45	1,225 50	13,073 95	17,746 87	6,071 58	23,818 45	36,892 40	147 29	729 75	877 04	538 57	8.32	2,602 37
Warren,	12,674 95	885 58	13,560 53	8,571 47	487 66	9,059 13	22,619 66	215 99	118 94	334 93	402 04	4.10	592 72
Watertown,	4,682 54	675 02	5,357 56	7,451 70	25 49	7,477 19	12,834 75	794 14	29 93	824 12	831 29	.85	425 00
Wayland,	13,987 81	25,886 33	39,874 14	5,679 97	1,273 43	6,953 40	46,827 54	10,033 46	493 57	10,527 03	1,277 69	2.58	516 00
Webster,	977 87	290 65	1,268 52	842 22	49 67	891 89	2,160 41	112 22	19 17	131 39	266 39	2.59	285 63
Wellesley,	3,714 37	393 19	4,107 56	13,372 77	2 56	13,375 33	17,482 89	333 21	2 17	335 38	1,119 26	1.18	296 58
Wellfleet,	5,238 26	1,840 43	7,078 69	2,024 87	175 53	2,200 40	9,279 09	395 79	37 74	433 53	198 69	4.65	195 16
Wenham,	8,283 85	921 43	9,205 28	3,112 96	100 27	3,213 23	12,418 51	523 54	56 97	580 51	514 86	1.76	308 12
Westborough,	2,626 20	105 27	2,731 47	53 16	1,420 64	1,473 80	4,205 27	35 20	475 13	510 33	129 43	2.99	322 40
West Boylston,	4,934 13	1,089 87	6,024 00	377 82	121 50	499 32	6,523 32	446 66	49 79	496 45	252 06	2.44	122 00
West Bridgewater,	13,478 31	6,336 91	19,815 22	3,673 11	4,814 50	8,487 61	28,302 83	2,005 35	1,523 57	3,528 92	725 34	3.16	225 35
West Brookfield,	5,051 37	554 10	5,605 47	939 10	248 20	1,187 30	6,792 77	207 52	92 95	300 47	210 36	2.67	133 50
Westfield,	24,532 60	2,076 12	26,608 72	15,569 21	9,892 39	25,461 60	52,070 32	357 33	1,702 64	2,059 97	569 76	5.81	2,538 03
Westford,	4,346 41	495 43	4,841 84	–	4,719 06	4,719 06	9,560 90	152 44	1,452 01	1,604 45	250 26	3.25	413 78
Westminster,	12,509 34	1,262 50	13,771 84	19,644 93	1,137 44	20,782 37	34,554 21	240 47	216 65	457 12	464 75	5.25	203 61
West Newbury,	14,805 36	1,459 05	16,264 41	5,554 71	75 35	5,630 06	21,894 47	286 65	14 80	301 45	369 65	5.09	389 91
Weston,	21,067 78	911 16	21,978 94	23,059 37	1,489 80	29,549 17	51,528 11	289 25	472 95	762 20	1,090 54	3.15	802 11
Westport,	11,994 10	15,497 51	27,491 61	13,853 89	791 83	14,645 72	42,137 33	3,646 47	186 31	3,832 78	558 78	4.25	738 36
West Springfield,	9,104 06	1,020 75	10,124 81	7,815 55	43	7,815 98	17,940 79	375 27	15	375 42	631 93	2.72	1,136 80
West Tisbury,	1,798 02	819 35	2,617 37	2,421 08	1,809 39	4,230 47	6,847 84	153 14	338 20	491 34	90 59	5.35	201 74
Westwood,	2,171 43	145 36	2,316 79	2,424 42	161 55	2,585 97	4,902 76	137 13	152 40	289 53	325 55	1.06	134 43

Table showing the Amounts expended for Repair, Maintenance, etc. — Concluded.

TOWN OR CITY.	AMOUNTS EXPENDED.						Total expended.	EXPENDED PER MILE IN 1914.			Cost per Mile per Year.	Length under Maintenance (Miles).	Amount to be assessed on Cities and Towns.
	REVENUE APPROPRIATION.			MOTOR VEHICLE FEES FUND.				From Revenue Appropriation.	From Motor Vehicle Fees Fund.	Total.			
	To 1914.	During 1914.	Total.	To 1914.	During 1914.	Total.							
Weymouth,	$19,001 34	$2,274 16	$21,275 50	$12,301 56	$3,659 37	$15,960 93	$37,236 43	$328 16	$528 04	$356 20	$509 67	6.93	$2,219 85
Whately,	13,432 51	289 19	13,721 70	9,726 39	24 27	9,750 66	23,472 36	74 34	6 23	80 57	537 49	3.89	115 53
Whitman,	3,531 96	496 91	4,028 87	4,421 84	1,637 74	6,059 58	10,088 45	292 30	963 37	1,255 67	318 51	1.70	533 98
Wilbraham,	15,912 29	592 78	16,505 07	11,912 62	58 34	11,970 96	28,476 03	116 91	11 50	128 41	425 33	5.07	306 95
Williamsburg,	5,362 28	468 27	5,830 55	5,051 27	390 54	5,441 81	11,272 36	176 70	147 37	324 07	296 02	2.65	243 64
Williamstown,	11,314 89	549 28	11,864 17	5,224 51	359 46	5,583 97	17,448 14	341 16	223 26	564 42	527 29	1.61	805 00
Wilmington,	1,193 36	671 98	1,865 34	840 78	43 66	884 44	2,749 78	183 10	11 89	194 99	168 55	3.67	254 38
Winchester,	6,681 37	668 88	7,350 25	4,533 54	3,008 45	7,541 99	14,892 24	343 01	1,542 79	1,885 80	523 08	1.95	891 00
Winchendon,	909 49	398 58	1,308 07	197 60	1,363 41	1,561 01	2,869 08	234 45	802 00	1,036 45	263 95	1.70	170 00
Windsor,	1,410 02	182 79	1,592 81	459 70	312 79	772 49	2,365 30	52 67	90 14	142 81	126 35	3.47	86 75
Woburn,	5,010 72	1,224 62	6,235 34	1,990 59	171 40	2,161 99	8,397 33	406 85	56 94	463 79	304 25	3.01	991 07
Worcester,	22,112 83	1,495 69	23,608 52	7,561 93	22,369 33	29,931 26	53,539 78	367 49	5,496 15	5,863 64	942 45	4.07	1,636 59
Wrentham,	7,398 81	1,301 97	8,700 78	7,636 27	3,146 88	10,783 15	19,483 93	212 74	514 19	726 93	253 13	6.12	387 92
Yarmouth (north),	5,633 58	734 63	6,368 21	} 6,229 67	{ 208 25	} 11,868 22	28,292 94	{ 198 01	56 13	254 14	} 180 49	{ 3.71	} 999 46
Yarmouth (south),	8,942 83	1,113 68	10,056 51		{ 5,430 30			{ 218 79	1,066 85	1,285 64		{ 5.09	

APPENDIX J.

STATEMENT SHOWING THE NUMBER OF PETITIONS RECEIVED AND THE LENGTH PETITIONED FOR, THE LAYOUTS MADE AND THEIR LENGTH AND DISTRIBUTION IN THE VARIOUS COUNTIES OF THE COMMONWEALTH.

COUNTIES.	PETITIONS RECEIVED.				PETITIONS SITUATED IN —			LAYOUTS MADE IN —			Number of Layouts.
	County.	City.	Town.	Totals.	City.	Town.	Totals.	City.	Town.	Totals.	
Barnstable,	4	–	52	56	–	15	15	–	15	15	119
Berkshire,	17	12	55	84	2	29	31	2	20	22	120
Bristol,	4	8	49	61	2	17	19	1	17	18	114
Dukes,	3	–	6	9	–	6	6	–	6	6	27
Essex,	7	24	60	91	7	25	32	7	20	27	146
Franklin,	2	–	62	64	–	18	18	–	15	15	103
Hampden,	4	6	35	45	3	17	20	2	11	13	87
Hampshire,	1	7	50	58	1	17	18	1	12	13	86
Middlesex,	14	26	104	144	9	43	52	7	34	41	193
Nantucket,	–	–	1	1	–	1	1	–	1	1	14
Norfolk,	2	7	62	71	1	26	27	1	23	24	100
Plymouth,	–	8	66	74	1	25	26	1	19	20	135
Suffolk,	–	4	6	10	2	2	4	2	1	3	9
Worcester,	1	9	166	176	2	57	59	3	44	47	271
Totals,	59	111	774	944	30	298	328	27	238	265	1,524

NUMBER OF PETITIONS RECEIVED, ETC. — *Concluded.*

COUNTIES.	LENGTHS PETITIONED FOR.		LENGTHS LAID OUT.					
			1894-1913.		1914.		TOTALS.	
	Feet.	Miles.	Feet.	Miles.	Feet.	Miles.	Feet.	Miles.
Barnstable,	756,424	143.26	553,982	104.91	23,493	4.46	577,475	109.37
Berkshire,	903,436	171.11	417,607	79.10	66,570	12.61	484,177	91.71
Bristol,	865,359	163.89	402,738	76.28	18,817	3.56	421,555	79.84
Dukes,	155,363	29.43	121,449	23.00	–	–	121,449	23.00
Essex,	1,188,846	225.16	421,324	79.79	44,212	8.37	465,536	88.16
Franklin,	724,567	137.23	290,849	55.08+	33,533	6.35	324,382	61.43
Hampden,	748,524	141.84	303,861	57.55	–	–	303,861	57.55
Hampshire,	533,494	101.04	231,128	43.77	7,816	1.48	238,944	45.25
Middlesex,	1,746,260	330.71	710,203	134.51	28,996	5.49	739,199	140.00
Nantucket,	34,185	6.47	34,211	6.48	–	–	34,211	6.48
Norfolk,	827,831	156.79	313,551	59.38	25,044	4.74	338,595	64.13
Plymouth,	1,084,569	205.41	536,118	101.54	30,283	5.74	566,401	107.28
Suffolk,	75,095	14.23	32,048	6.07	–	–	32,048	6.07
Worcester,	2,001,381	379.03	807,309	152.90	31,147	5.90	838,456	158.80
Totals,	11,645,334	2,205.60	5,176,378	980.37	309,911	58.70	5,486,289	1,039.07

Appendix K.

Table showing the Work done under the "Small Town" Act since its Passage in 1900.

[Section 17, Chapter 47, Revised Laws, and Chapter 279, Acts of 1908.]

Towns.	Allotments.			Lengths built (Feet).			Types of Roads.
	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.	
Barnstable County.							
Eastham,	$3,260 40	$1,000 00	$4,260 40	12,490	2,088	14,578	Grading; sand and oil.
Harwich,	1,300 00	–	1,300 00	7,705	–	7,705	Sand and oil.
Mashpee,	1,200 00	–	1,200 00	1,944	–	1,944	Sand and oil.
Provincetown,	5,095 56	–	5,095 56	9,930	–	9,930	Macadam.
Wellfleet,	1,653 00	–	1,653 00	2,250	–	2,250	Broken stone and clay.
	$12,508 96	$1,000 00	$13,508 96	34,319	2,088	36,407	
Berkshire County.							
Alford,	$3,369 00	$600 00[1]	$3,969 00	9,207	1,150	10,357	Gravel.
Becket,	5,150 00	2,700 00[2]	7,850 00	6,680	–[3]	6,680	Gravel and macadam.
Cheshire,	–	750 00	750 00	–	–[3]	–	–
Egremont,	6,232 30	1,000 00[4]	7,232 30	15,117	3,400	18,517	Gravel.
Florida,	6,686 00	1,250 00[2]	7,936 00	31,300	15,126	46,426	Gravel and grading.
Hancock,	1,898 39	1,200 00[5]	3,098 39	4,090	3,138	7,228	Gravel.
Hinsdale,	4,000 00	–	4,000 00	5,175	–	5,175	Bituminous macadam and gravel.
Lanesborough,	4,652 00	–	4,652 00	5,500	–	5,500	Gravel road and steel concrete bridge.
Monterey,	4,768 00	800 00[6]	5,568 00	14,800	1,800	16,600	Gravel.
Mount Washington,	2,642 00	750 00[7]	3,392 00	3,980	–[3]	3,980	Gravel and bridge repairs.
New Ashford,	2,561 00	–	2,561 00	2,600	–	2,600	Gravel road and culvert construction and repairs.
New Marlborough,	10,363 48	1,000 00[8]	11,363 48	31,150	3,410	34,560	Gravel.
Otis,	5,535 92	750 00	6,285 92	11,950	1,600	13,550	Gravel.
Peru,	3,191 00	3,500 00[9]	6,691 00	9,345	–[3]	9,345	Gravel.
Richmond,	3,750 00	2,400 00[10]	6,150 00	6,889	3,900	10,789	Bituminous gravel and macadam.
Sandisfield,	9,778 14	1,000 00[4]	10,778 14	21,958	1,033	22,991	Macadam.

Savoy,	6,505 00	2,700 00[11]	9,205 00	11,896	700	12,596	Gravel.
Sheffield,	8,488 00	–	8,488 00	16,182	–	16,182	Grading and gravel.
Tyringham,	6,165 00	1,400 00[12]	7,565 00	10,000	2,200	12,200	Grading and macadam.
Washington,	6,298 00	1,000 00[4]	7,298 00	11,340	–[3]	11,340	Grading and gravel.
West Stockbridge,	7,626 00	1,000 00[1]	8,626 00	15,200	1,260	16,460	Gravel.
Windsor,	2,500 00	–	2,500 00	1,110	–	1,110	Macadam.
	$112,159 23	$23,800 00	$135,959 23	245,469	38,717	284,186	
Bristol County.							
Berkley,	–	$1,500 00[13]	$1,500 00	–	6,670	6,670	Gravel.
Easton,	$12,000 00	–	12,000 00	31,686	–	31,686	Macadam.
Freetown,	2,350 00	–	2,350 00	–	–	–	Macadam.
Norton,	4,176 00	–	4,176 00	9,850	–	9,850	Macadam.
Raynham,	3,316 00	–	3,316 00	6,135	–	6,135	Macadam.
Rehoboth,	5,500 00	1,500 00[13]	7,000 00	7,650	13,350	21,000	Macadam and gravel.
Westport,	3,400 00	3,000 00[14]	6,400 00	6,150	25,344	31,494	Macadam and bituminous macadam.
	$30,742 00	$6,000 00	$36,742 00	61,471	45,364	106,835	
Essex County.							
Boxford,	$2,261 00	–	$2,261 00	19,694	–	19,694	Gravel.
Danvers,	7,000 00	–	7,000 00	19,700	–	19,700	Gravel.
Essex,	932 00	$1,000 00[2]	1,932 00	22,000	12,500	34,500	Gravel and repairs.
Georgetown,	2,950 00	–	2,950 00	15,437	–	15,437	Gravel and macadam.
Groveland,	1,000 00	–	1,000 00	12,740	–	12,740	Bituminous gravel.
Lynnfield,	1,500 00	1,000 00[2]	2,500 00	–	15,650	15,650	Gravel.
Marblehead,	7,800 00	–	7,800 00	11,008	–	11,008	Macadam.
Middleton,	3,444 00	500 00	3,944 00	10,800	1,100	11,900	Gravel.
North Andover,	2,500 00	–	2,500 00	11,450	–	11,450	Gravel.
Rockport,	–	1,000 00[2]	1,000 00	–	5,600	5,600	Gravel.
Salisbury,	1,948 00	–	1,948 00	2,150	–	2,150	Macadam.
Saugus,	1,200 00	–	1,200 00	900	–	900	Bituminous macadam.
Swampscott,	2,925 00	–	2,925 00	5,200	–	5,200	Macadam.
Topsfield,	4,984 00	–	4,984 00	35,375	–	35,375	Gravel.
West Newbury,	1,000 00	–	1,000 00	1,400	–	1,400	Macadam.
	$41,444 00	$3,500 00	$44,944 00	167,854	34,850	202,704	

[1] Town contributed $200.
[2] Town contributed a like amount.
[3] Work begun but not completed.
[4] Town contributed $500.
[5] Town contributed $800.
[6] Town contributed $400.
[7] Town contributed $350.
[8] Town contributed $1,250.
[9] Town contributed $3,100.
[10] Town contributed $1,200.
[11] Town contributed $2,000.
[12] Town contributed $900.
[13] Town contributed $1,500.
[14] Town contributed $3,000.

Work done under the "Small Town" Act — *Continued.*

Towns.	Allotments.			Lengths built (Feet).			Types of Roads.
	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.	
Franklin County.							
Ashfield,	$1,000 00	$1,500 00[1]	$2,500 00	3,350	4,900	8,600	Gravel.
Bernardston,	2,965 00	–	2,965 00	16,400	–	16,400	Gravel.
Buckland,	2,000 00	500 00[1]	2,500 00	–	6,600	6,600	Gravel and concrete bridge.
Charlemont,	4,400 00	1,200 00[2]	5,600 00	7,034	–[3]	7,034	Gravel and grading.
Colrain,	2,900 00	1,675 00[4]	4,575 00	8,250	4,350	12,600	Gravel.
Conway,	7,252 00	1,100 00[5]	8,352 00	14,010	2,900	16,910	Gravel.
Gill,	3,212 00	700 00[6]	3,912 00	11,575	2,700	14,275	Gravel road and bridge repairs.
Hawley,	3,497 00	700 00[7]	4,197 00	11,075	2,050	13,125	Grading and gravel.
Heath,	4,477 00	600 00[3]	5,077 00	11,272	1,000	12,272	Gravel.
Leverett,	7,176 00	1,000 00[9]	8,176 00	20,529	3,100	23,629	Gravel.
Leyden,	3,993 00	500 00[7]	4,493 00	13,600	1,400	15,000	Gravel.
Monroe,	5,067 04	700 00[6]	5,767 04	11,070	–[3]	11,070	Gravel.
New Salem,	7,852 00	1,500 00[1]	9,352 00	18,022	2,600	20,622	Gravel.
Orange,	2,440 67	–	2,440 67	11,225	–	11,225	Gravel.
Rowe,	5,323 00	1,000 00[2]	6,323 00	14,066	2,000	16,066	Gravel.
Shutesbury,	3,934 00	–	3,934 00	10,950	–	10,950	Gravel.
Warwick,	5,470 00	–	5,470 00	7,000	–	7,000	Gravel.
Wendell,	8,588 00	1,050 00[10]	9,638 00	15,800	–	15,800	Grading and gravel.
Whately,	–	2,600 00[11]	2,600 00	–	3,750	3,750	Macadam.
	$81,546 71	$16,325 00	$97,871 71	205,228	37,350	242,928	
Hampden County.							
Blandford,	$6,235 16	$10,000 00[12]	$16,235 16	9,010	–[3]	9,010	Grading and gravel.
Brimfield,	2,600 00	1,000 00[9]	3,600 00	3,170	4,050	7,220	Gravel.
Chester,	2,071 43	800 00[8]	2,871 43	4,601	2,161	6,762	Gravel.
East Longmeadow,	4,863 75	3,000 00[13]	7,863 75	4,610	14,900	19,510	Gravel and macadam.
Granville,	8,623 00	1,900 00[14]	10,523 00	19,105	–[15]	19,105	Grading and gravel.
Hampden,	5,658 00	500 00[7]	6,158 00	41,198	950	42,148	Gravel.
Holland,	814 00	400 00	1,214 00	2,925	630	3,555	Grading and gravel.
Longmeadow,	1,200 00	–	1,200 00	1,425	–	1,425	Macadam and concrete culvert.
Ludlow,	–	2,500 00[16]	2,500 00	–	–	–	–
Monson,	1,500 00	1,800 00[12]	3,300 00	2,150	2,451	4,601	Macadam.
Montgomery,	2,220 00	–	2,220 00	5,450	–	5,450	Gravel.

Russell,	2,693 85	–	2,693 85	600	1,486[17]	2,086	Grading and bituminous macadam.
Southwick,	6,628 00	1,000 00[9]	7,628 00	22,761	–[3]	22,761	Gravel.
Tolland,	5,542 06	800 00[9]	6,342 06	9,112	–[15]	9,112	Grading, gravel and concrete culvert.
	$50,649 25	$23,700 00	$74,349 25	126,117	26,628	152,745	
Hampshire County.							
Amherst,	$4,800 00	$2,000 00[12]	$6,800 00	4,435	2,070	6,505	Water-bound and bituminous macadam.
Chesterfield,	6,809 52	1,100 00[9]	7,909 52	9,076	2,875	11,951	Gravel.
Cummington,	4,233 00	–	4,233 00	9,900	–	9,900	Gravel.
Easthampton,	2,000 00	–	2,000 00	2,430	–	2,430	Macadam.
Enfield,	7,170 56	1,000 00[9]	8,170 56	31,110	–[3]	31,110	Gravel.
Goshen,	700 00	700 00[6]	1,400 00	–	1,800	1,800	Gravel.
Greenwich,	4,051 00	900 00[9]	4,951 00	9,390	3,510	12,900	Gravel.
Hadley,	1,500 00	4,000 00[12]	5,500 00	–	6,050	6,050	Macadam.
Hatfield,	2,500 00	–	2,500 00	4,340	–	4,340	Macadam.
Huntington,	3,050 00	1,000 00[9]	4,050 00	5,425	2,886	8,311	Gravel.
Middlefield,	2,960 00	400 00	3,360 00	8,158	400	8,558	Gravel.
Pelham,	5,670 00	1,100 00[9]	6,770 00	10,100	1,450	11,550	Gravel.
Plainfield,	4,580 00	500 00[7]	5,080 00	6,474	1,000	7,474	Gravel.
Prescott,	5,128 50	700 00[5]	5,823 50	10,030	1,650	11,680	Grading and gravel.
Southampton,	3,523 83	1,000 00[9]	4,523 83	7,767	2,046	9,813	Gravel.
Westhampton,	5,786 35	800 00[6]	6,586 35	14,699	1,939	16,638	Gravel.
Williamsburg,	1,500 00	2,000 00[12]	3,500 00	4,100	–[3]	4,100	Macadam.
Worthington,	8,677 00	1,000 00[9]	9,677 00	17,877	2,216	20,093	Gravel.
	$74,639 76	$18,200 00	$92,839 76	155,311	29,892	185,203	
Middlesex County.							
Ashby,	$1,000 00	–	$1,000 00	2,150	–	2,150	Macadam.
Ayer,	4,000 00	–	4,000 00	17,600	–	17,600	Gravel.
Bedford,	1,500 00	$3,000 00[12]	4,500 00	2,100	–[3]	2,100	Macadam.
Belmont,	2,300 00	–	2,300 00	5,237	–	5,237	Macadam.
Billerica,	8,484 00	–	8,484 00	8,250	2,250[17]	10,500	Macadam and bituminous macadam.
Boxborough,	900 00	600 00[8]	1,500 00	3,950	2,750	6,700	Gravel.

[1] Town contributed $1,000.
[2] Town contributed $400.
[3] Work begun but not completed.
[4] Town contributed $1,200.
[5] Town contributed $800.
[6] Town contributed $300.
[7] Town contributed $100.
[8] Town contributed $200.
[9] Town contributed $500.
[10] Town contributed $250.
[11] Town contributed $2,000.
[12] Town contributed a like amount.
[13] Town contributed $3,000.
[14] Town contributed $1,300.
[15] Work not yet begun.
[16] Town contributed $5,000.
[17] Built with 1913 allotment.

WORK DONE UNDER THE "SMALL TOWN" ACT — *Continued.*

TOWNS.	ALLOTMENTS.			LENGTHS BUILT (FEET).			Types of Roads.
	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.	
Middlesex County — Con.							
Burlington,	$3,100 00	–	$3,100 00	11,709	4,300[1]	16,009	Macadam.
Carlisle,	3,936 00	$500 00	4,536 00	15,537	1,400	16,937	Gravel.
Dracut,	7,989 13	2,000 00[2]	9,989 13	6,225	1,756	7,981	Macadam and bituminous macadam.
Dunstable,	3,399 00	400 00	3,799 00	22,250	1,250	23,500	Gravel.
Framingham,	4,000 00	–	4,000 00	4,200	–	4,200	Macadam.
Hopkinton,	2,000 00	–	2,000 00	3,400	–	3,400	Gravel.
Hudson,	6,000 00	1,000 00[2]	7,000 00	19,057	1,500	20,557	Grading and gravel.
Littleton,	2,012 00	–	2,012 00	4,492	–	4,492	Gravel.
Maynard,	9,383 89	–	9,383 89	15,233	–	15,233	Grading, macadam and bridge repairs.
North Reading,	10,500 00	2,000 00[2]	12,500 00	20,718	3,960	24,678	Macadam.
Pepperell,	1,000 00	–	1,000 00	4,050	–	4,050	Gravel.
Reading,	6,632 00	–	6,632 00	7,120	–	7,120	Macadam and bituminous macadam.
Sherborn,	6,558 00	–	6,558 00	33,900	–	33,900	Gravel.
Shirley,	7,584 00	–	7,584 00	22,450	7,400[1]	29,850	Gravel and bituminous macadam.
Stow,	4,145 00	1,000 00[2]	5,145 00	8,472	26,220	34,692	Gravel.
Townsend,	893 05	500 00[2]	1,393 05	3,450	2,100	5,550	Gravel.
Wakefield,	5,150 00	–	5,150 00	6,986	–	6,986	Macadam.
Wayland,	1,449 50	–	1,449 50	1,175	–	1,175	Bituminous macadam.
Westford,	2,366 30	–	2,366 30	5,400	–	5,400	Gravel.
Wilmington,	–	1,000 00[3]	1,000 00	–	1,200	1,200	Bituminous macadam.
	$111,281 87	$12,100 00	$123,381 87	255,111	56,086	311,197	
Norfolk County.							
Avon,	$3,369 00	–	$3,369 00	8,745	–	8,745	Gravel and macadam.
Bellingham,	2,412 00	$1,000 00[2]	3,412 00	6,250	3,615	9,865	Macadam and gravel.
Foxborough,	474 92	500 00[2]	974 92	5,004	2,900	7,904	Gravel.
Holbrook,	400 00	–	400 00	1,200	–	1,200	Gravel.
Medfield,	1,040 00	–	1,040 00	720	–	720	Macadam.
Medway,	4,828 00	500 00[2]	5,328 00	11,256	1,850	13,106	Macadam and gravel.
Millis,	5,136 00	–	5,136 00	14,150	–	14,150	Gravel.
Norfolk,	1,500 00	–	1,500 00	8,370	–	8,870	Gravel.
Sharon,	–	2,000 00[2]	2,000 00	–	4,420	4,420	Macadam.
	$19,159 92	$4,000 00	$23,159 92	56,195	12,785	68,980	

Plymouth County.							
Abington,	$2,600 00	–	$2,600 00	5,760	–	5,760	Macadam.
Bridgewater,	576 20	–	576 20	3,590	–	3,590	Surfacing.
Carver,	17,990 00	$2,800 00[4]	20,790 00	55,285	–[5]	55,285	Macadam.
Duxbury,	500 00	–	500 00	3,600	–	3,600	Gravel.
East Bridgewater,	10,142 87	–	10,142 87	17,090	5,059[1]	22,149	Macadam and bituminous macadam.
Halifax,	6,304 00	1,000 00[6]	7,304 00	10,582	4,073	14,655	Macadam.
Hanover,	2,048 82	–	2,048 82	2,827	–	2,827	Macadam.
Hanson,	14,597 25	2,000 00[2]	16,597 25	42,522	3,716	46,238	Macadam.
Lakeville,	6,200 00	–	6,200 00	21,181	–	21,181	Macadam and gravel.
Norwell,	3,880 00	–	3,880 00	19,111	–	19,111	Gravel.
Pembroke,	6,423 45	1,400 00[2]	7,823 45	31,907	6,126	38,033	Gravel and macadam.
Plymouth,	1,000 00	–	1,000 00	2,000	–	2,000	Sand and oil.
Plympton,	4,167 00	1,000 00[6]	5,167 00	24,600	4,751	29,351	Gravel.
Rochester,	7,500 00	–	7,500 00	32,572	–	32,572	Macadam and gravel.
Rockland,	2,125 00	–	2,125 00	4,702	–	4,702	Macadam.
Wareham,	1,737 59	–	1,737 59	7,200	–	7,200	Sand and oil.
	$87,792 18	$8,200 00	$95,992 18	284,529	23,725	308,254	
Worcester County.							
Ashburnham,	$9,594 00	–	$9,594 00	26,715	–	26,715	Gravel.
Berlin,	6,024 00	$700 00[7]	6,724 00	21,233	2,500	23,733	Gravel.
Bolton,	6,114 00	1,750 00[8]	7,864 00	29,960	–[5]	29,960	Gravel.
Boylston,	4,060 00	750 00	4,810 00	14,790	1,600	16,390	Gravel.
Brookfield,	900 00	–	900 00	2,500	–	2,500	Macadam.
Dana,	5,569 00	700 00[9]	6,269 00	14,975	2,500	17,475	Gravel.
Douglas,	1,500 00	–	1,500 00	4,500	–	4,500	Macadam.
Hardwick,	9,000 00	1,500 00[10]	10,500 00	8,350	13,600	21,950	Macadam.
Harvard,	2,200 00	–	2,200 00	2,875	–	2,875	Macadam.
Holden,	1,200 00	–	1,200 00	1,600	–	1,600	Gravel.
Hubbardston,	5,885 00	1,500 00[11]	7,385 00	12,580	3,775	16,355	Gravel.
Mendon,	7,039 00	–	7,039 00	20,642	2,200[1]	22,842	Gravel and repairs.
Millbury,	3,000 00	–	3,000 00	3,145	–	3,145	Macadam and bituminous macadam.
New Braintree,	1,500 00	1,000 00[6]	2,500 00	3,400	2,025	5,425	Macadam and gravel.
Oakham,	6,318 00	1,500 00[11]	7,818 00	14,710	7,130	21,840	Gravel and macadam.
Oxford,	4,600 00	–	4,600 00	13,698	–	13,698	Gravel and bituminous macadam.

[1] Built with 1913 allotment.
[2] Town contributed a like amount.
[3] Town contributed $1,700.
[4] Town contributed $4,500.
[5] Work begun but not completed.
[6] Town contributed $500.
[7] Town contributed $400.
[8] Town contributed $1,250.
[9] Town contributed $300.
[10] Town contributed $10,000.
[11] Town contributed $1,000.

WORK DONE UNDER THE "SMALL TOWN" ACT — *Concluded.*

TOWNS.	ALLOTMENTS.			LENGTHS BUILT (FEET).			Types of Roads.
	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.	
Worcester County — Con.							
Paxton,	$3,000 00	$300 00[1]	$3,300 00	7,400	–[2]	7,400	Gravel.
Petersham,	8,760 00	1,800 00[1]	10,560 00	14,635	5,000	19,635	Gravel.
Phillipston,	2,150 00	900 00[3]	3,050 00	15,970	17,420	33,390	Gravel.
Princeton,	3,500 00	2,000 00[1]	5,500 00	2,428	4,400	6,828	Macadam.
Royalston,	1,800 00	1,200 00[4]	3,000 00	6,500	4,000	10,500	Gravel.
Rutland,	3,954 00	2,000 00[5]	5,954 00	2,581	6,500	9,081	Gravel and macadam.
Shrewsbury,	1,800 00	2,000 00[1]	3,800 00	6,000	2,400	8,400	Gravel.
Southbridge,	9,125 00	–	9,125 00	5,993	–	5,993	Vitrified paving brick (paved) and bituminous macadam.
Sturbridge,	1,950 00	2,000 00[6]	3,950 00	–	5,683	5,683	Gravel.
Westborough,	1,500 00	2,000 00[1]	3,500 00	5,137	2,700	7,837	Gravel.
West Brookfield,	2,250 00	2,700 00[7]	4,950 00	2,080	–[2]	2,080	Bituminous macadam.
Westminster,	500 00	–	500 00	2,050	–	2,050	Gravel.
Winchendon,	9,000 00	–	9,000 00	9,210	16,800[8]	26,010	Gravel.
	$123,792 00	$26,300 00	$150,092 00	275,657	100,233	375,890	

[1] Town contributed a like amount.
[2] Work begun but not completed.
[3] Town contributed $500.
[4] Town contributed $600.
[5] Town contributed $2,700.
[6] Town contributed $1,000.
[7] Town contributed $2,200.
[8] Built with 1913 allotment.

Summary.

COUNTIES.	Allotments.			Lengths built (Feet).		
	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.	Previous to 1914.	In 1914.	Total to Nov. 30, 1914.
Barnstable,	$12,508 96	$1,000 00	$13,508 96	34,319	2,088	36,407
Berkshire,	112,159 23	23,800 00	135,959 23	245,469	38,717	284,186
Bristol,	30,742 00	6,000 00	36,742 00	61,471	45,364	106,835
Essex,	41,444 00	3,500 00	44,944 00	167,854	34,850	202,704
Franklin,	81,546 71	16,325 00	97,871 71	205,228	37,350	242,928
Hampden,	50,649 25	23,700 00	74,349 25	126,117	26,628	152,745
Hampshire,	74,639 76	18,200 00	92,839 76	155,311	29,892	185,203
Middlesex,	111,281 87	12,100 00	123,381 87	255,111	56,086	311,197
Norfolk,	19,159 92	4,000 00	23,159 92	56,195	12,785	68,980
Plymouth,	87,792 18	8,200 00	95,992 18	284,529	23,725	308,254
Worcester,	123,792 00	26,300 00	150,092 00	275,657	100,233	375,890
	$745,715 88	$143,125 00	$888,840 88	1,867,261	407,718	2,275,329

Appendix L.

Appropriations.

Appropriations for the Construction and Repair of State Highways.

1894, chapter 497, section 8,	$300,000 00
1895, chapter 347, section 3,	400,000 00
1896, chapter 481, section 3,	600,000 00
1897, chapter 340, section 1,	800,000 00
1898, chapter 539, section 1,	400,000 00
1899, chapter 396, section 1,	500,000 00
1900, chapter 442, section 1,	500,000 00
1901, chapter 269, section 1,	500,000 00
1902, chapter 246, section 1,	500,000 00
1903, chapter 280, section 1,	2,250,000 00 [1]
1907, chapter 446, section 1,	2,500,000 00 [1]
1912, chapter 704, section 1,	5,000,000 00 [1]
	$14,250,000 00

Appropriations for the Salaries and Expenses of the Commission, paid from the Treasury of the Commonwealth.

1898, chapter 497, section 1,	$14,300 00
1899, chapter 367, section 1,	28,500 00
1900, chapter 141, section 1,	28,500 00
1901, chapter 451, section 1,	33,750 00
1902, chapter 67, section 1,	33,750 00
1903, chapters 14 and 485, section 1,	43,950 00 [2]
1904, chapters 19 and 461, section 1,	39,300 00 [2]
1905, chapters 36, 431 and 480, section 1,	46,150 00 [2]
1906, chapters 36 and 140, section 1,	49,514 14 [2]
1907, chapter 157, section 1,	66,950 00 [3]
1908, chapter 212, section 1,	76,300 00 [3]
1909, chapter 127,	47,300 00 [4]
1910, chapter 139,	56,250 00 [4]
1911, chapter 555, section 1,	61,250 00 [4]
1912, chapter 287, section 1,	61,500 00 [4]
1913, chapter 35, section 1,	98,500 00 [5]
1914, chapter 236, section 1,	105,500 00 [5]

[1] To cover expenses of construction for a period of five years.

[2] Includes expenses of automobile department.

[3] Includes expenses of moth suppression and automobile department in part.

[4] Includes expense of moth suppression.

[5] Includes expense of moth suppression and maintenance of Fall River and Newburyport bridges.

Appropriations for Maintenance, paid from the Treasury of the Commonwealth.

1903, chapter 280, section 2,	$40,000 00
1904, chapter 316, section 1,	50,000 00
1905, chapter 36, section 1,	60,000 00
1906, chapter 36, section 1,	64,166 66
1907, chapter 157, section 1,	100,000 00
1908, chapters 212 and 657, section 1,	150,000 00
1909, chapters 127 and 493, section 1,	250,000 00
1910, chapter 139, section 1,	200,000 00
1911, chapter 555, section 1,	200,000 00
1912, chapter 287, section 1,	200,000 00
1913, chapter 35, section 1,	200,000 00
1914, chapter 236, section 1,	350,000 00[1]

[1] Includes appropriation for widening.

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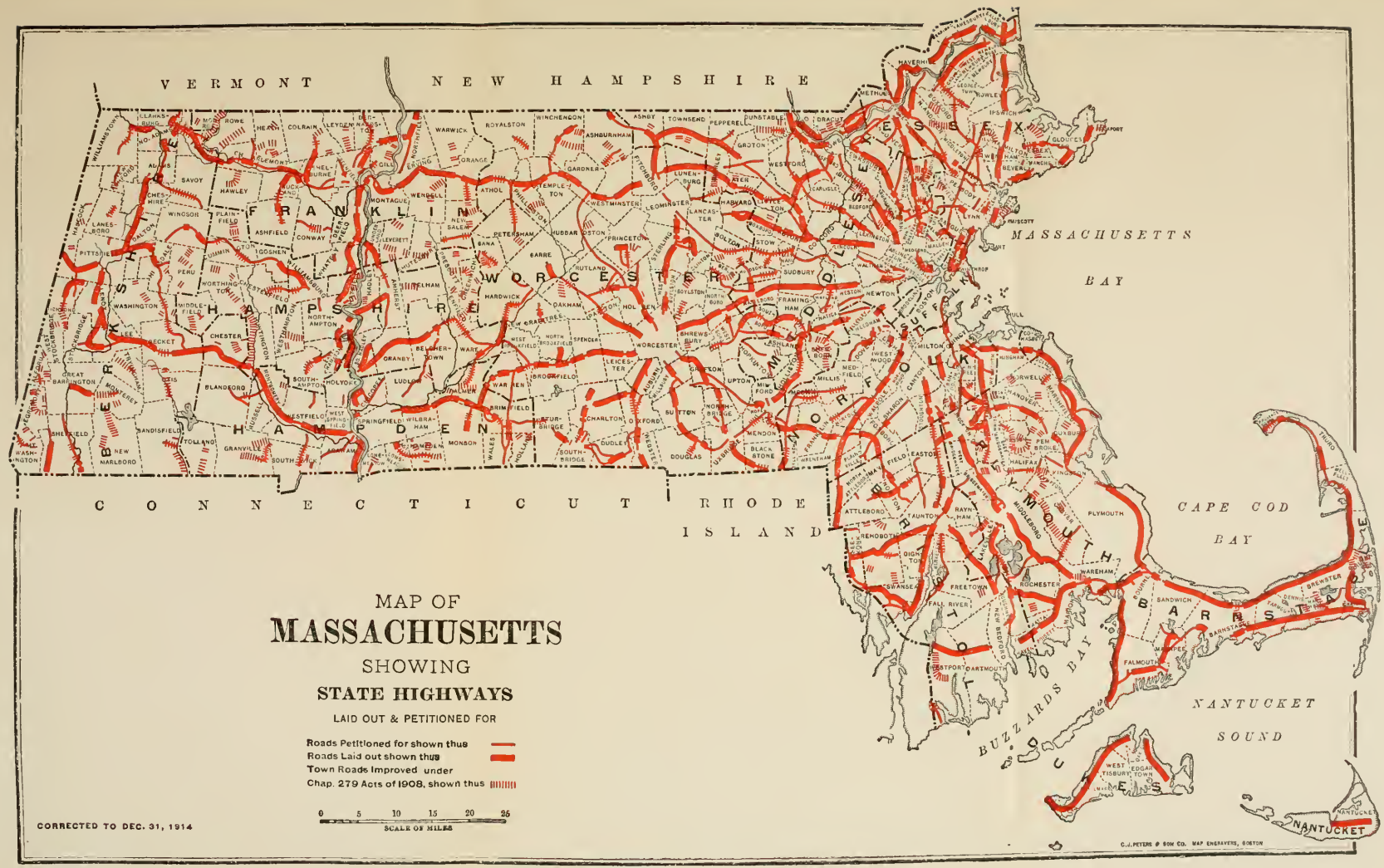
VERMONT
NEW HAMPSHIRE
MASSACHUSETTS BAY
CAPE COD BAY
NANTUCKET SOUND
BUZZARDS BAY
RHODE ISLAND
CONNECTICUT
FRANKLIN
HAMPSHIRE
HAMPDEN
WORCESTER
MIDDLESEX
ESSEX
NORFOLK
SUFFOLK
PLYMOUTH
BARNSTABLE
DUKES
NANTUCKET
MAP OF
MASSACHUSETTS
SHOWING
STATE HIGHWAYS
LAID OUT & PETITIONED FOR
Roads Petitioned for shown thus
Roads Laid out shown thus
Town Roads Improved under
Chap. 279 Acts of 1908, shown thus
0 5 10 15 20 25
SCALE OF MILES
CORRECTED TO DEC. 31, 1914
C.J. PETERS & SON CO. MAP ENGRAVERS, BOSTON